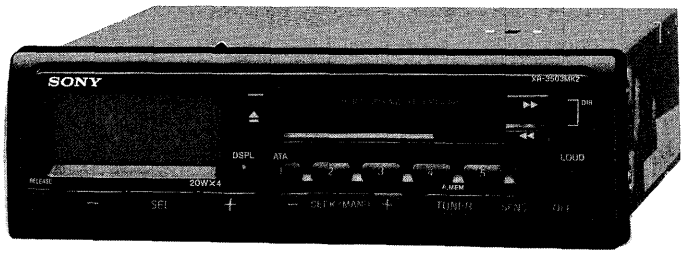
XR-3503MK2

SERVICE MANUAL

East European Model



Model Name Using Similar Mechanism	XR-3503
Tape Transport Mechanism Type	MG-36SZ6-32

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.13 % (WRMS)
Frequency response	30 – 15,000 Hz
Signal-to- noise ratio	55 dB

Tuner section

FM

Tuning range	65.0 – 74.0 MHz 87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12 dBf
Selectivity	70 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

MW/LW

Tuning range	MW: 531 – 1,602 kHz LW : 153 – 281 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	MW: 30 µV LW : 50 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	20 W × 4 (at 4 ohms)

General

Output lead	Power antenna relay control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 186 × 57 × 170 mm (w/h/d)
Mounting dimension	Approx. 182 × 53 × 155 mm (w/h/d)
Mass	Approx. 1.2 kg
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

FM/MW/LW CASSETTE CAR STEREO

SONY®

TABLE OF CONTENTS

1. GENERAL

Button Locations 3
Setting the Clock 3
Cassette Player Operation 3
Radio Reception 4
Other Functions 5
Connections 6

2. DISASSEMBLY

2-1. Cover 8
2-2. Sub Panel Assy 8
2-3. Mechanism Deck Block 9
2-4. Main Board 9

3. MECHANICAL ADJUSTMENTS 10

4. ELECTRICAL ADJUSTMENTS

Deck Section 10
Tuner Section 11

5. DIAGRAMS

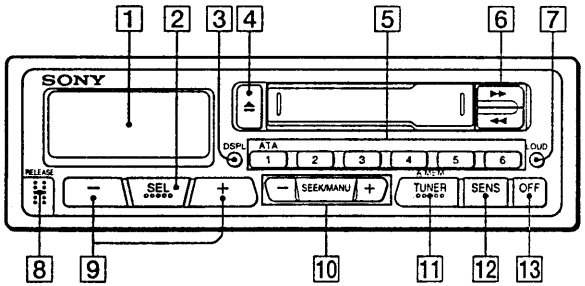
5-1. IC Pin Description 14
5-2. Printed Wiring Boards—Main Section— 16
5-3. Schematic Diagram—Main Section— 19
5-4. Printed Wiring Board—Panel Section— 24
5-5. Schematic Diagram—Panel Section— 27

6. EXPLODED VIEWS

6-1. Chassis Section 30
6-2. Front Panel Section 31
6-3. Mechanism Section (1) 32
6-4. Mechanism Section (2) 33

7. ELECTRICAL PARTS LIST 34

Button Locations



Refer to the pages in ● for details.

1 Display window
2 SEL (control mode select) button ❺❽
3 DSPL (display mode change/time set) button ❺
4 ≜ (eject) button ❺
5 During radio reception:
Preset number buttons ❼
During tape playback:
ATA (Automatic Tuner Activation) button ❻
6 ◀◀/▶▶ (fast winding)/DIR (tape transport direction change) buttons ❺❻
7 LOUD (loudness) button ❽
8 RELEASE (front panel release) button ❹❽
9 (volume/bass/treble/balance/fader control) buttons ❺❽
10 SEEK/MANU buttons ❻❼
11 TUNER/A.MEM (radio on • band select/automatic memory) button ❻❼
12 SENS (sensitivity adjust) button ❻
13 OFF button ❹

Setting the Clock

The clock has a 24-hour digital indication.

For example, setting it to 10:08

1 **Display the time.**
(Press the TIME button during unit operation.)

2 **Press the DSPL button for more than two seconds.**

The hour digit(s) blinks.

Set the hour digits.

(to go back) (to go forward)

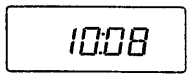
3 **Press the SEL button momentarily.**

The minute digits blink.

Set the minute digits.

(to go back) (to go forward)

4 **Press the DSPL button momentarily.**



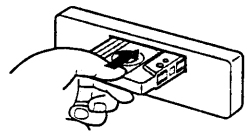
The clock activates.

Note
The clock cannot be set unless the power is turned on. Set the clock after you turn on the radio, or during tape playback.

Cassette Player Operation

Listening to Tape Playback

After inserting the cassette, playback will start automatically.



To change the tape direction,
press both the ◀◀ and the ▶▶ buttons at the same time.

Indication of Tape Transport Direction

The side facing up is being played.

The side facing down is being played.

Tape playback automatically changes direction at the end of the tape.

Note
Before turning off the unit, eject the tape to avoid tape damage.

Ejecting the Cassette

Press the ≜ button to stop playback and eject the cassette.

This section is extracted from instruction manual.

Fast-winding the Tape

Direction indicator*	To advance	To rewind
►		
◄		

To resume playback, press the other fast-winding button partially until the locked button is released.

* *The ◄ or ► indicator will flash while fast-winding the tape.*

EN

Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the ATA 1 button during playback.
→ "ATA" appears on the display.
When fast-forwarding or rewinding with the ◄◄ or ►► button, the tuner will turn on automatically.

Radio Reception

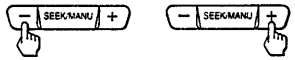
Searching for Stations Automatically

— Automatic Tuning

1 Select the desired band.

FM1 → FM2 → MW → LW → FM1

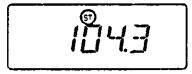
2 Press either side of the SEEK/MANU button momentarily to search for the next station (automatic tuning).



For lower frequencies — For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with a sufficient signal strength is tuned in,



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the SENS button momentarily to get the "LCL" indication.
Only the stations with relatively strong signals will be tuned in. The local seek mode functions only when the automatic tuning is in operation.

If FM Stereo Reception is Poor — Monaural Mode

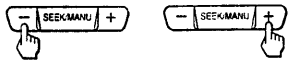
Press the SENS button momentarily.
→ "MONO" appears on the display.
The sound will improve, but it will become monaural.

Tuning in by Adjusting the Frequency — Manual Tuning

1 Select the desired band.

FM1 → FM2 → MW → LW → FM1

2 Press and hold either side of the SEEK/MANU button.
Release the button when the desired station is received.



For lower frequencies — For higher frequencies

PREVENT ACCIDENTS!
When tuning in during driving, use the automatic tuning and the memory preset tuning instead of the manual tuning.

Memorizing Stations Automatically

— Automatic Memory Function

Stations with the clearest reception are automatically searched and memorized on each band (FM1, FM2, MW and LW). Up to 6 stations on each band can be stored on the preset number buttons 1 to 6 in the order of band frequency.

1 Select the desired band.

FM1 → FM2 → MW → LW → FM1

2 Press the TUNER/A.MEM button for more than two seconds.

The unit will be start scanning the selected band and memorize the tuned stations on the preset number button 1 through 6 automatically.

Memorizing Only the Desired Stations

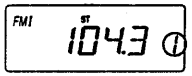
1 Select the desired band.

FM1 → FM2 → MW → LW → FM1

2 Tune in the station which you wish to store on the preset number button.

3 Press and hold the desired preset number button (ATA 1 to 6) for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears in the display window.



Up to 6 stations on each band (FM1, FM2, MW and LW) can be stored on the preset number buttons in the order of your choice. Therefore, 12 stations can be memorized on FM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

1 Select the desired band.

FM1 → FM2 → MW → LW → FM1

2 Press momentarily the preset number button (ATA 1 to 6) on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

EN

Cassette Player Operation/Radio Reception

Other Functions

Adjusting the Sound Characteristics

1 Select the item you want to adjust by pressing the [SEL] button repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 Adjust the selected item by pressing either the [−] or [+] button.

Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

EN

Enjoying Bass and Treble at Low Volume

— Loudness Function

Press the [LOUD] button. → "LOUD" will appear on the display.
Bass and treble will be boosted. To cancel, press again.

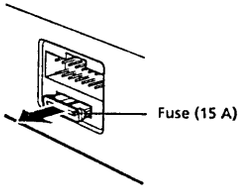
Muting the Beep Tone

Press the [5] button while pressing the [SEL] button.
To reactivate the beep tone, press these buttons once more.

Maintenance

Fuse Replacement

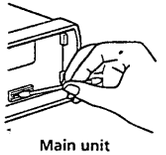
When replacing the fuse, be sure to use one matching the amperage rating stated on the fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.

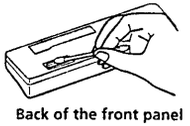


Warning
Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Cleaning the Connectors

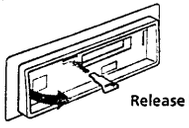
The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, open the front panel by pressing the RELEASE button, then detach it and clean with a cotton swab dipped in alcohol. Do not apply too much force. Otherwise, the connector may get damaged.


Main unit

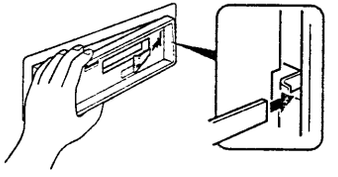

Back of the front panel

Dismounting the Unit

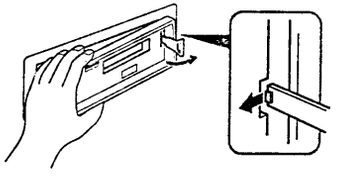
1


Release key (supplied)

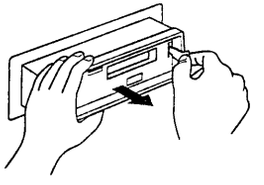
2



3



4



Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**

Podłączenia

Uwaga

- Urządzenie to przeznaczone jest do pracy przy uziemieniu ujemnym 12V DC (prąd stały).
- Przed podłączeniem należy odłączyć uziemienie akumulatora samochodowego, aby zapobiec zwarciu.
- **Żółty i czerwony** wejściowy przewód zasilający podłączyć dopiero po podłączeniu wszystkich innych przewodów.
- Czerwony przewód zasilający podłączyć do końcówki o napięciu +12 V, która zasilana jest zawsze po przekręceniu kluczyka w stacyjce do położenia, w którym włącza się zasilanie przyrządów.
- **Wszystkie przewody uziemiające poprowadzić do *wspólnego miejsca uziemienia.***

Свързване

Внимание

- Този апарат е проектиран за експлоатация само с постоянен ток с напрежение 12 В и заземяване на апарата на отрицателната клема на акумулаторната батерия.
- Преди да започнете свързването на апарата, откачете отрицателната клема на акумулаторната батерия, за да избегнете възникването на късо съединение.
- Извършете свързването на **жълтия** и **червения** захранващи ел. проводници само след като сте свързали вече всички останали проводници.
- Свържете червения захранващ ел. проводник към *положителната клема* под напрежение 12 В, която се захранва с ток, когато ключът за запалване е завъртян в положение за включване на допълнителни уреди.
- **Всички заземяващи проводници свържете към една обща точка.**

Csatlakozások

Figyelem

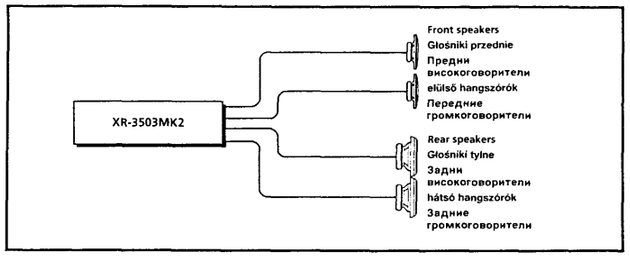
- Ez a készülék csak 12 V-os negatív földelésű, egyenáramú akkumulátorról üzemeltethető.
- Egy esetleges rövidzárlat elkerülése érdekében vegye le az autó akkumulátorának csatlakozóját a készülék csatlakoztatása előtt.
- A **sárga** és a **piros** színű tápvezetéket csak az összes többi vezeték bekötése után csatlakoztassa.
- A piros vezetéket ahhoz a +12 V-os csatlakozási ponthoz csatlakoztassa, *mely áramot kap, ha az inditókulcs félig van elforditva* (ACC-pozíció).
- **Az összes földelővezetéket közös földelőponthoz csatlakoztassa.**

Подключения

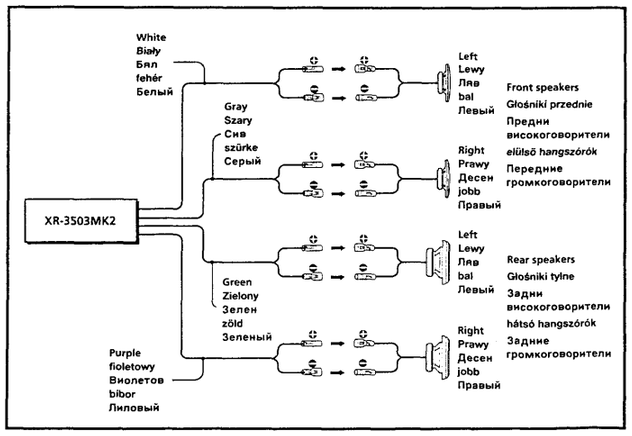
Предостережение

- Аппарат предназначен для эксплуатации только при подключении к электросети постоянного тока с напряжением 12 В и отрицательной массой.
- До начала установки во избежание короткого замыкания отсоедините клемму массы от аккумуляторной батареи *автомашины*.
- Подключайте электропровода питания **красного** и **желтого** цвета только после подключения всех прочих проводов.
- Убедитесь в том, что красный электропровод подключен к положительной клемме источника тока с напряжением 12 В, которая оказывается под током при повороте ключа зажигания в положение для пользования вспомогательными электроприборами.
- **Подключите все провода, выводимые на массу, к одному общему контакту.**

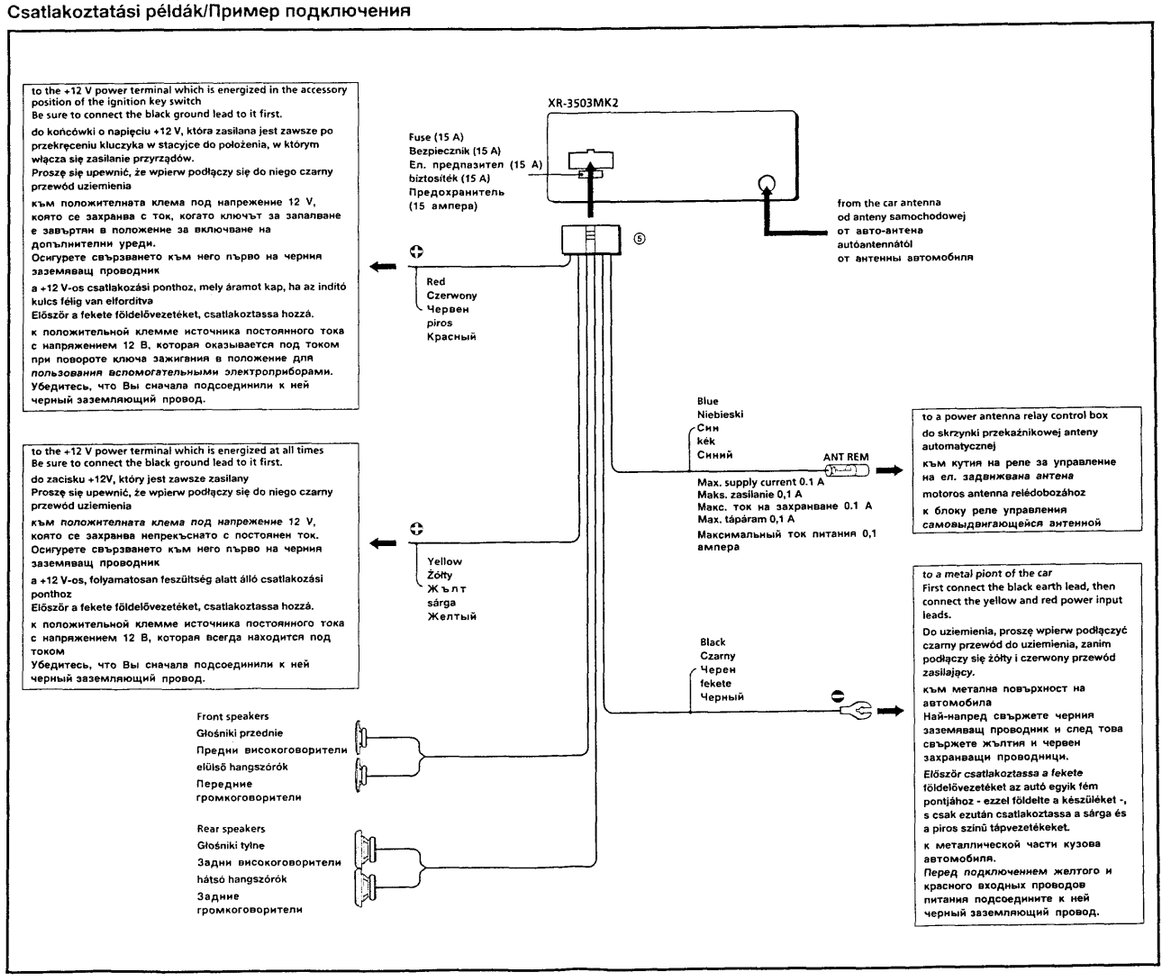
Connection Diagram/Schemat podłączeń/Схема за свързване/Csatlakoztatási vázlat/Схема подключения



Speaker Connections/Podłączenie głośników/Свързване на високоговорители/Hangszórók csatlakoztatása/Подключение громкоговорителей



Connections of Example/Przykład podłączenia/Примерно свързване/Csatlakoztatási példák/Пример подключения


XR-3503MK2
Fuse (15 A)
Bezpiecznik (15 A)
Ел. предпазител (15 А)
biztosíték (15 A)
Предохранитель
(15 ампера)
from the car antenna
od anteny samochodowej
от авто-антена
autóantennától
от антенны автомобиля
Red
Czerwony
Червен
piros
Красный
Blue
Niebieski
Син
kék
Синий
ANT REM
Max. supply current 0.1 A
Maks. zasilanie 0,1 A
Макс. ток на захранване 0.1 А
Max. tápáram 0,1 A
Максимальный ток питания 0,1 ампера
to a power antenna relay control box
do skrzynki przekaźnikowej anteny automatycznej
към кутия на реле за управление на ел. задвижвана антена
motoros antenna relédobozához
к блоку реле управления самовыдвигающейся антенной
Yellow
Żółty
Жълт
sárga
Желтый
Black
Czarny
Черен
fekete
Черный
to a metal piont of the car
First connect the black earth lead, then connect the yellow and red power input leads.
Do uziemienia, proszę wpierw podłączyć czarny przewód do uziemienia, zanim podłączy się żółty i czerwony przewód zasilający.
към метална повърхност на автомобила
Най-напред свържете черния заземяващ проводник и след това свържете жълтия и червен захранващи проводници.
Először csatlakoztassa a fekete földelővezetéket az autó egyik fém pontjához - ezzel földelte a készüléket -, s csak ezután csatlakoztassa a sárga és a piros színű tápvezetékeket.
к металлической части кузова автомобиля.
Перед подключением желтого и красного входных проводов питания подсоедините к ней черный заземляющий провод.
to the +12 V power terminal which is energized in the accessory position of the ignition key switch
Be sure to connect the black ground lead to it first.
do końcówki o napięciu +12 V, która zasilana jest zawsze po przekręceniu kluczyka w stacyjce do położenia, w którym włącza się zasilanie przyrządów.
Proszę się upewnić, że wpierw podłączy się do niego czarny przewód uziemienia
към положителната клема под напрежение 12 V, която се захранва с ток, когато ключът за запалване е завъртян в положение за включване на допълнителни уреди.
Осигурете свързването към него първо на черния заземяващ проводник
a +12 V-os csatlakozási ponthoz, mely áramot kap, ha az inditó kulcs félig van elforditva
Először a fekete földelővezetéket, csatlakoztassa hozzá.
к положительной клемме источника постоянного тока с напряжением 12 В, которая оказывается под током при повороте ключа зажигания в положение для пользования вспомогательными электроприборами.
Убедитесь, что Вы сначала подсоединили к ней черный заземляющий провод.
to the +12 V power terminal which is energized at all times
Be sure to connect the black ground lead to it first.
do zacisku +12V, który jest zawsze zasilany
Proszę się upewnić, że wpierw podłączy się do niego czarny przewód uziemienia
към положителната клема под напрежение 12 V, която се захранва непрекъснато с постоянен ток.
Осигурете свързването към него първо на черния заземяващ проводник
a +12 V-os, folyamatosan feszültség alatt álló csatlakozási ponthoz
Először a fekete földelővezetéket, csatlakoztassa hozzá.
к положительной клемме источника постоянного тока с напряжением 12 В, которая всегда находится под током
Убедитесь, что Вы сначала подсоединили к ней черный заземляющий провод.
Front speakers
Głośniki przednie
Предни високоговорители
elülső hangszórók
Передние громкоговорители
Rear speakers
Głośniki tylne
Задни високоговорители
hátsó hangszórók
Задние громкоговорители

Notes on speaker connection

- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Uwagi na temat podłączania głośników

- *Stosować głośniki o impedancji 4 do 8 omów i o odpowiedniej obciążalności mocowej, gdyż w innym przypadku może dojść do ich uszkodzenia.*
- *Nie podłączać przewodów układu głośników do podwozia samochodu, a przyłączy głośnika prawego nie łączyć z przyłączami głośnika lewego.*
- *Nie podłączać głośników równolegle.*
- *Nie podłączać do urządzenia głośników aktywnych (z wbudowanymi wzmacniaczami), może to bowiem doprowadzić do ich uszkodzenia. Podłączać wyłącznie głośniki pasywne.*

Забележки по свързването на високоговорителите

- *Използувайте високоговорители с ел. съпротивление (импеданс) от 4 до 8 ома и с подходяща мощност според силата на усилвателя. В противен случай е възможно да повредите високоговорителите.*
- *Не оставяйте изходните клеми за присъединяване на високоговорители в контакт с открити метални части от шасито на автомобила или пък клемите за подаване на сигнал към ляв и десен високоговорител в пряк контакт една с друга.*
- *Не свързвайте успоредно високоговорителите.*
- *Не свързвайте активни високоговорители (с вграден в тях усилвател) към клемите за изходен сигнал на апарата. В противен случай е възможно да повредите активните високоговорители. Ето защо е необходимо да се уверите, че свързвате пасивни високоговорители.*

Tudnivalók a hangszórók csatlakoztatásáról

- *4-8 ohm impedanciájú, megfelelő teljesítményű hangszórókat használjon, ellenkező esetben ugyanis előfordulhat, hogy a hangszórók károsodnak.*
- *Ne csatlakoztassa a hangszórókat az autó fémszerkezetéhez és ne csatlakoztassa a jobb hangszórót a bal hangszóróhoz.*
- *A hangszórókat semmi esetre se csatlakoztassa párhuzamosan.*
- *Ne csatlakoztasson aktív (beépített erősítővel felszerelt) hangszórókat a készülékhez, ellenkező esetben ugyanis károsodhatnak az aktív hangszórók. A készülékhez csak passzív hangszórókat szabad csatlakoztatni.*

Примечания к инструкции по подключению громкоговорителей

- *Перед подключением громкоговорителей аппарат необходимо выключить.*
- *Используйте громкоговорители с электрическим сопротивлением 4-8 Ом, способные принимать достаточно мощные сигналы. В противном случае громкоговорители могут быть повреждены.*
- *Не подключайте контакты системы громкоговорителей к шасси автомашины и не подключайте контакты правого громкоговорителя к контактам левого громкоговорителя.*
- *Не подключайте громкоговорители параллельно.*
- *Не подключайте активных громкоговорителей (т.е. со встроенными усилителями) к контактам аппарата для громкоговорителей, это может привести к повреждению активных громкоговорителей. Поэтому убедитесь, что Вы подключаете к этим контактам пассивные громкоговорители.*

Notes on the control leads

- *The power antenna control lead (blue) supplies +12 V DC when you turn on the unit.*
- *A power antenna without relay box cannot be used with this unit.*

Uwagi na temat przewodów kontrolnych

- *Przewód kontrolny anteny automatycznej (niebieski) dostarcza +12V DC proszę po włączeniu sprzęt.*
- *Do niniejszego urządzenia nie można używać anteny automatycznej bez skrzynki przekaźnikowej.*

Забележки по проводниците за управление

- *По кабела (син) за управление на електрически задвижваната антена се подава прав ток с напрежение 12 V, когато включите уреда.*
- *Ел. задвижвана антена без собствена кутия с реле, не може да бъде използувана с този апарат.*

Tudnivalók a vezérlővezetékekről.

- *A motoros antenna vezérlővezetéke (kék) 12 V egyenfeszültséget kap, ha bekapcsolja a készüléket.*
- *Ha a készülékhez motoros antennát csatlakoztat, úgy kizárólag relédobozzal felszerelt motoros antennát használjon.*

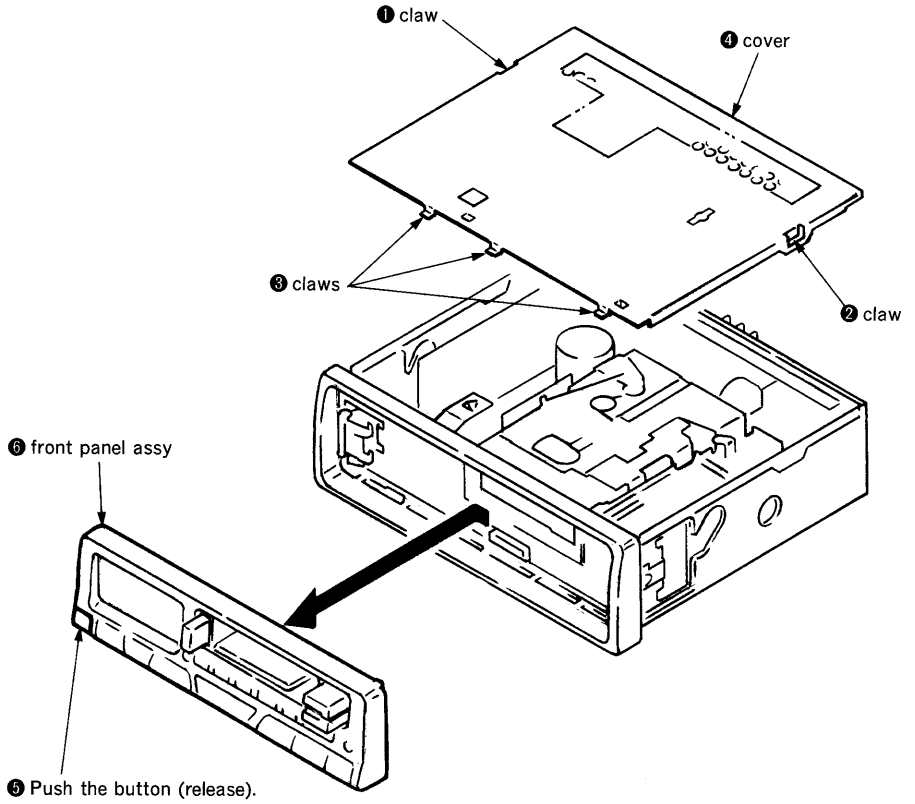
Примечания к инструкции по подключению проводов для управления электроприборами

- *Провод (голубой) для управления самовыдвигающейся антенной подводит постоянный ток напряжением 12 В при включении аппарата.*
- *С данным аппаратом нельзя использовать самовыдвигающиеся антенны без реле управления в отдельном корпусе.*

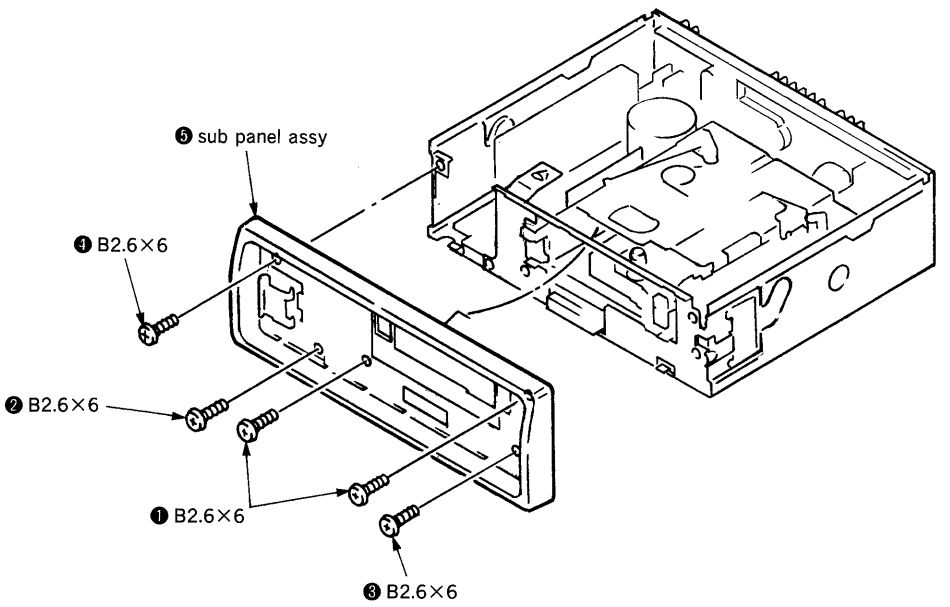
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

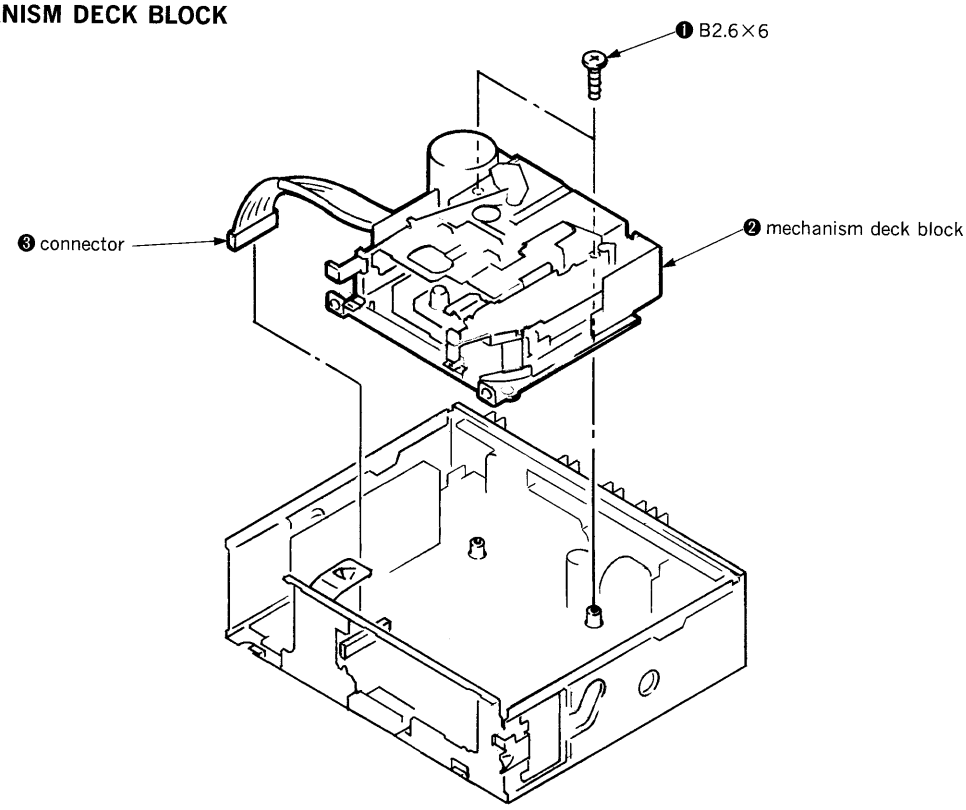
2-1. COVER



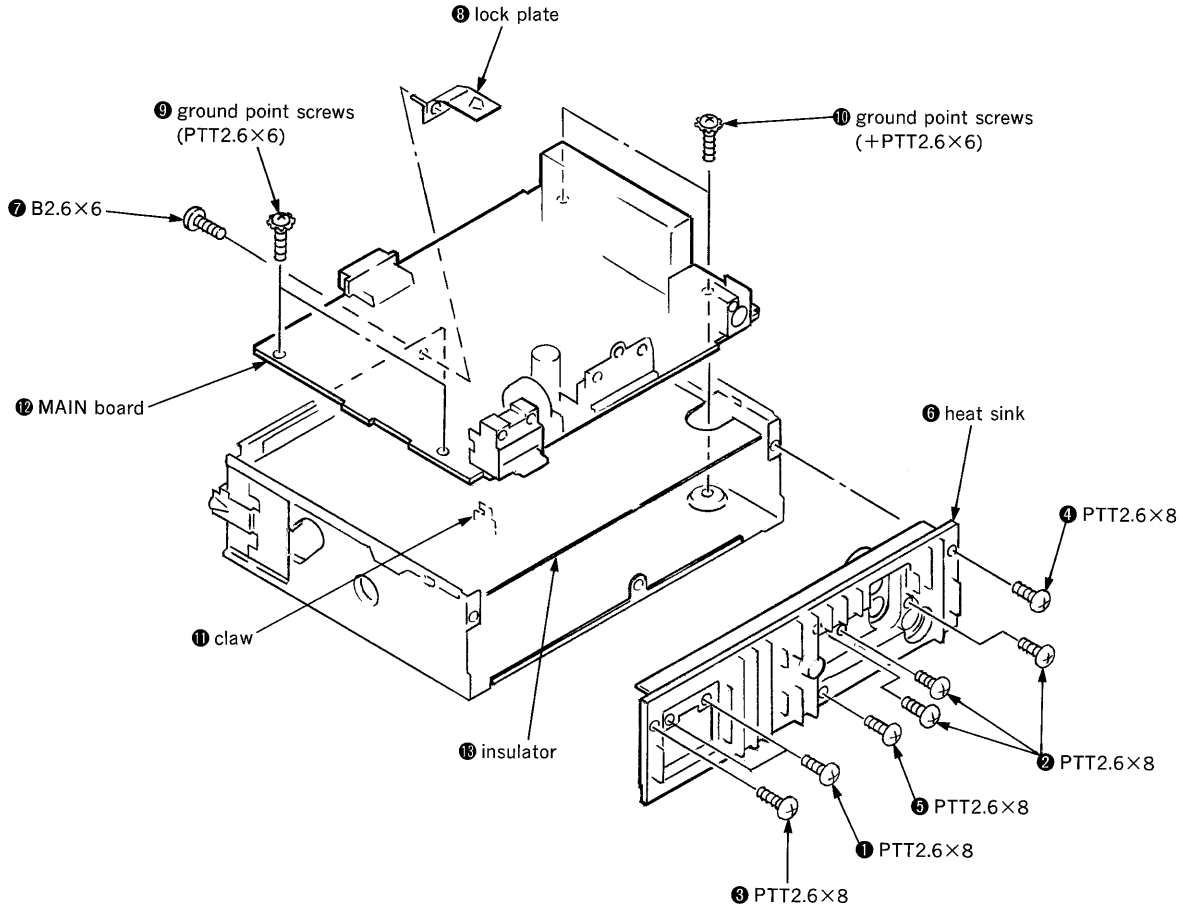
2-2. SUB PANEL ASSY



2-3. MECHANISM DECK BLOCK



2-4. MAIN BOARD



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	25−55g•cm (0.35−0.76 oz•inch)
FWD Back Tension		1.5−4.0g•cm (0.02−0.05 oz•inch)
REV	CQ-102RC	25−55g•cm (0.35−0.76 oz•inch)
REV Back Tension		1.5−4.0g•cm (0.02−0.05 oz•inch)
FF, REW	CQ-201B	more than 50g•cm (more than 0.70oz•inch)

SECTION 4
ELECTRICAL ADJUSTMENTS

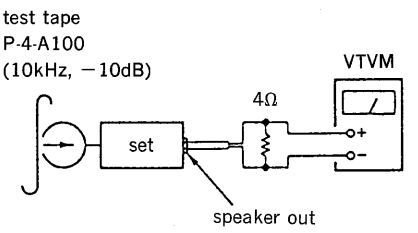
See the adjustment location from on page 13 for the adjustment.

DECK SECTION　**0dB=0.775V**

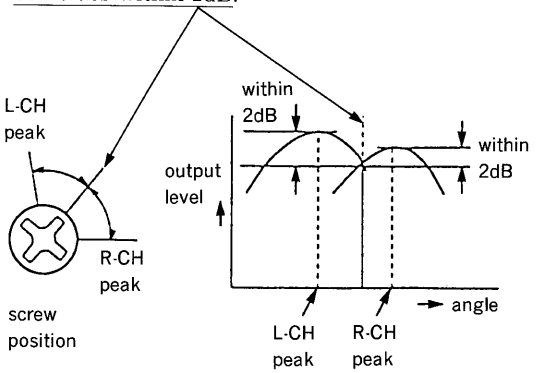
PB Head Azimuth Adjustment

Procedure:

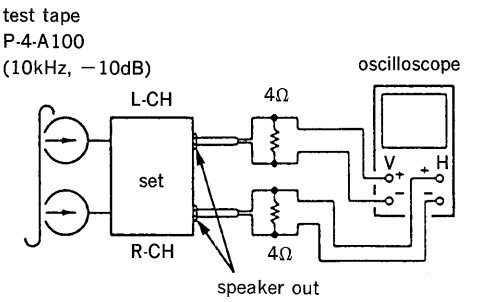
1. Put the set into the FWD PB mode.

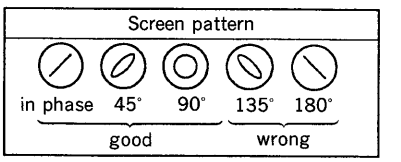


2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 2dB.



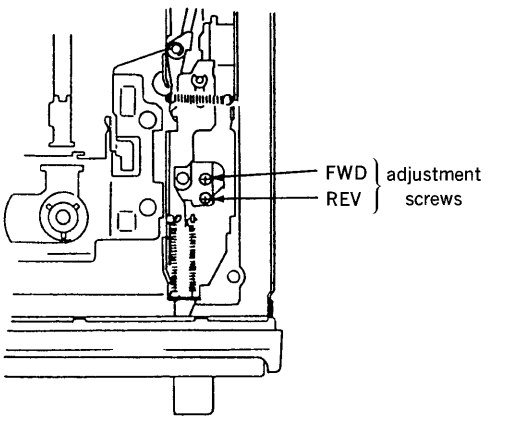
3. Check the phase in the PB mode.





4. Repeat the above adjustment for the REV PB mode.

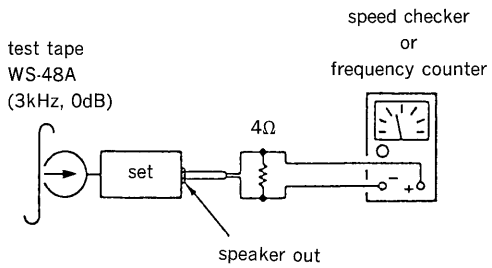
Adjustment Location: PB head



Capstan Motor Tape Speed Adjustment

Procedure :

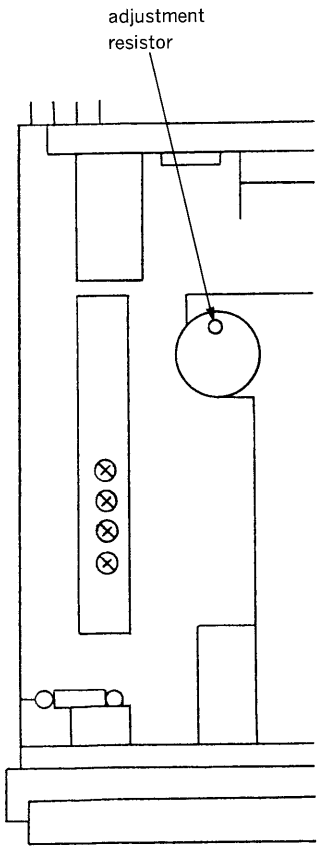
1. Put the set into the FWD PB mode.



Specification : Constant speed

Speed checker	Frequency counter
−2.0 to +3.0%	2,940 to 3,090Hz

Adjustment Location :



TUNER SECTION | 0dB=1μV

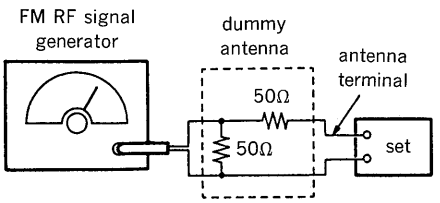
Cautions during repair
When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

FM SEEK Stop Adjustment

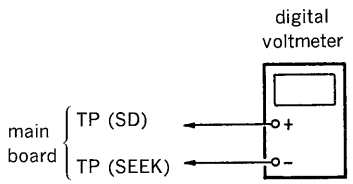
Note : Be sure to perform this adjustment before "MW SEEK Stop Adjustment".

Setting :

TUNER button : FM I



Carrier frequency : 98.00MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 1kHz, 22.5kHz deviation (30%)



Procedure :

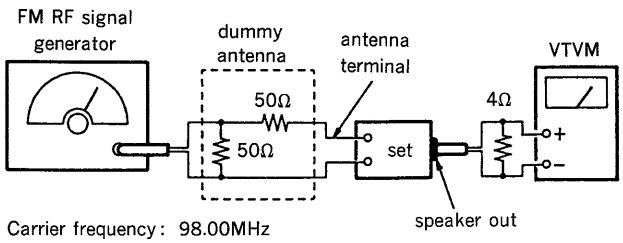
1. Adjust RV2 on TU1 so that the reading on the digital voltmeter changes point from low to high.

Adjustment Location : See page 13.

FM Noise Focus Adjustment

Setting :

TUNER button : FM I



Carrier frequency : 98.00MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 75kHz deviation (10%)

Procedure :

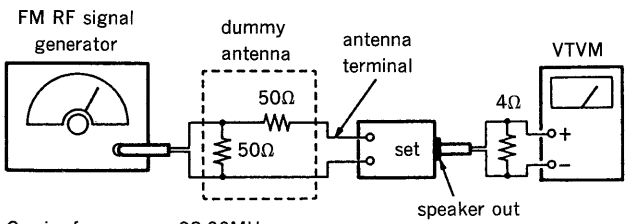
1. Tune the 98.00MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV3 on TU1 so that the output level is (A)−31dB then signal generator input set to −20dB.

Adjustment Location : See page 13.

FM Stereo Separation Adjustment

Setting :

TUNER button : FM I



Carrier frequency : 98.00MHz
Output level : 70dB (3.2mV)
Mode : stereo
Modulation : main : 1kHz, 33.75kHz deviation (45%)
sub : 1kHz, 33.75kHz deviation (45%)
pilot : 1kHz, 7.5kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU1 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ
The separations of both channels should be equal.

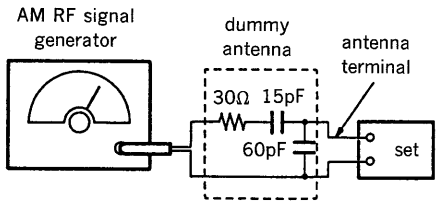
Specification : Separation more than 27dB

Adjustment Location : See page 13.

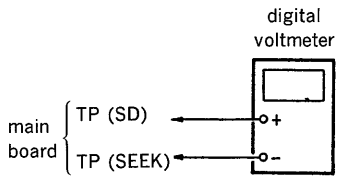
MW SEEK Stop Adjustment

Setting :

TUNER button : MW



Carrier frequency : 999kHz
Output level : 33dB (44.7μV)
Modulation : no modulation

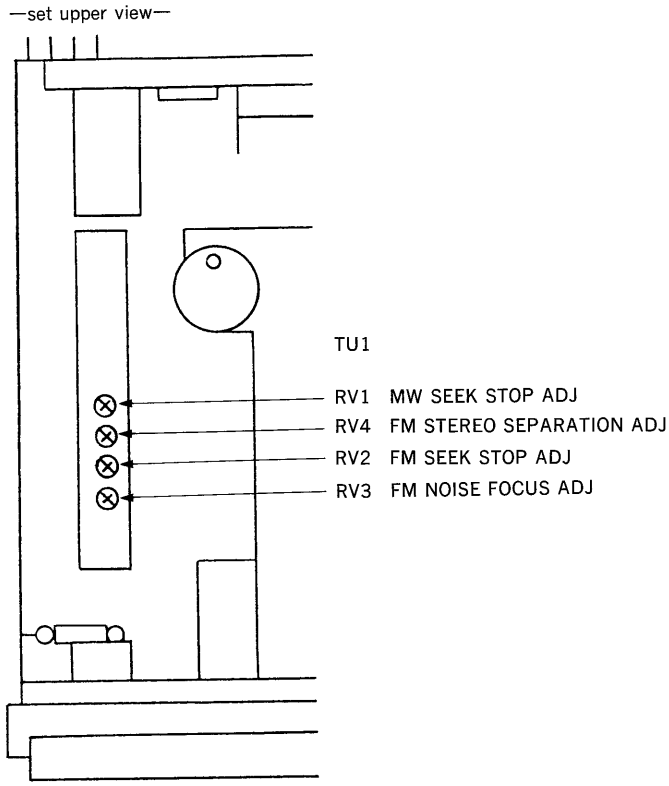


Procedure :

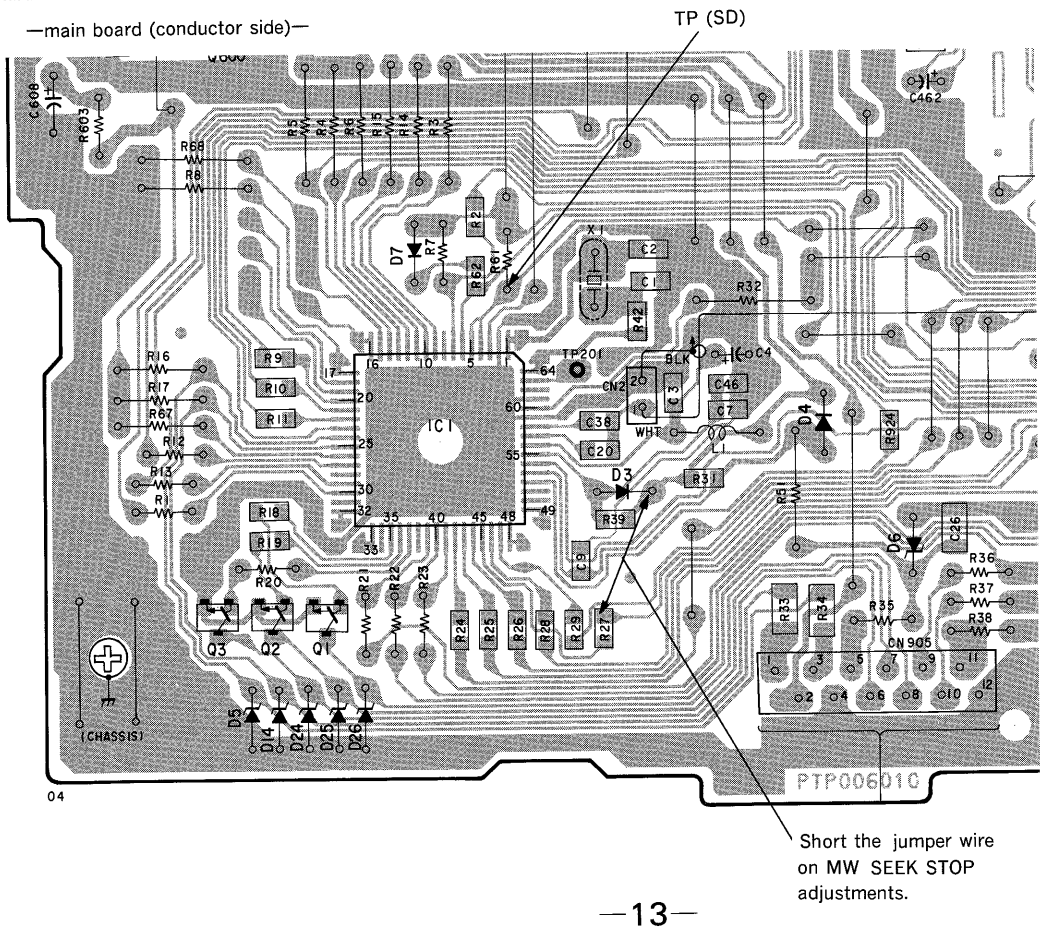
1. Short the jumper wire between TP (SEEK) and Q610 emitter (+5V). (See page 13.)
2. Adjust RV1 on TU1 so that the reading on the digital voltmeter changes point from low to high.
3. After adjustment is completed remove the jumper wire.

Adjustment Location : See page 13.

Adjustment Location :



Measurement Point :



SECTION 5
DIAGRAMS

5-1. IC PIN DESCRIPTION

• IC1 LC7233N-9207 (System Control)

Pin No.	Pin Name	I/O	Pin Description
1	X IN	I	Connect to crystal. (4.5MHz)
2	—	—	Connect to GND.
3	$\overline{\text{ILL IN}}$	I	At ILL IN : Low input
4	AM SD	I	At with AM SD : High input
5	FM SD	I	At with FM SD : High input
6	$\overline{\text{STEREO}}$	I	At STEREO : Low input
7	MOTOR	O	Reel/capstan motor control terminal. At MOTOR-ON : High output
8	—	—	Not used.
9	BEEP	O	For piezoelectric buzzer output terminal
10	POWER ON	O	At TAPE or RADIO : High output, at OFF or ACC OFF : Low output
11	ILL ON	O	At ACC-ON : High output, at ACC-OFF : Low output
12	N/R	I	NORMAL/$\overline{\text{REVERSE}}$ input terminal
13	FF-REW	I	At TAPE : High input, at RADIO : Low input
14	TAPE IN	I	At TAPE IN : Low input
15, 16	K1, K0	I	Diode matrix input
17—19	T2—T0	—	Not used.
20	VOL CE	O	Chip Enable output terminal to ELECTRONIC VOLUME IC (IC450).
21	VOL DI	O	Data output terminal to ELECTRONIC VOLUME IC (IC450).
22	VOL CL	O	Clock output terminal to ELECTRONIC VOLUME IC (IC450).
23	MUTE REQ	I	At ACC-OFF : High input
24	PANEL IN	I	At Detachable IN : Low input, at Detachable OUT : High input
25	BAND KEY	I	At TUNER-ON : Low input
26	RADIO	I	RADIO signal input terminal
27	MUTE	O	Audio mute output terminal
28	—	—	Not used.
29	AMP MUTE	O	Power amplifier mute output terminal
30	ANT ON	O	At TAPE or RADIO : High output, at OFF or ACC OFF : Low output
31—34	—	—	Not used.
35—37	KS2—KS0	O	Key matrix output
38	—	—	Not used.
39	LCD DATA	O	Data output terminal to LCD drive IC (IC900).
40	LCD CLK	O	Clock output terminal to LCD drive IC (IC900).
41	LCD CE	O	Chip Enable output terminal to LCD drive IC (IC900).
42	AM	O	At MW or LW : High output
43	MONO	O	At Monaural : High output
44	SEEK	O	At SEEK : High output
45	$\overline{\text{SEEK}}$	O	At SEEK : Low output
46	LOCAL/DX	O	At STEREO LOCAL : High output, at STEREO DX or MONO DX : Low output
47	FM ON	O	At FM : High output, at MW or LW : Low output
48	TUNER ON	—	Not used.
49—51	—	—	Not used.
52	CE	I	Chip Enable input terminal
53	KEY IN	I	Key matrix signal input terminal
54	IF IN	I	FM/AM IF input terminal
55	BU CHECK	I	Back-up voltage detection terminal

Pin No.	Pin Name	I/O	Pin Description
56	VDD	—	Power supply terminal (+5V)
57	FM IN	I	FM local OSC input terminal
58	AM IN	I	AM local OSC input terminal
59	GND	—	GND
60	EO	O	Phase comparator output terminal
61	LPF IN	—	Connect to GND.
62	LPF OUT	—	Not used.
63	—	—	Not used.
64	X OUT	O	Connect to crystal. (4.5MHz)

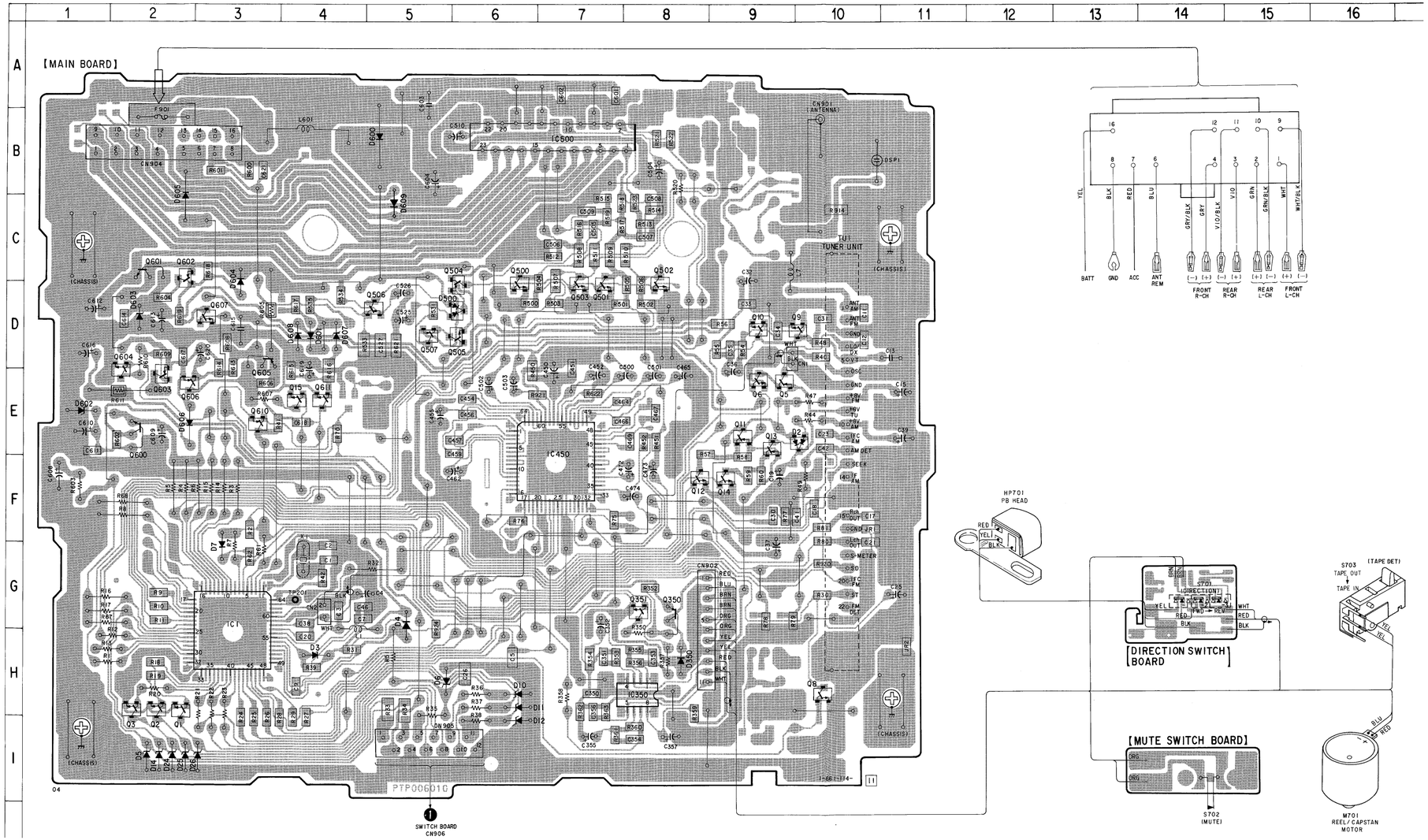
5-2. PRINTED WIRING BOARDS—MAIN SECTION—

• Semiconductor Location

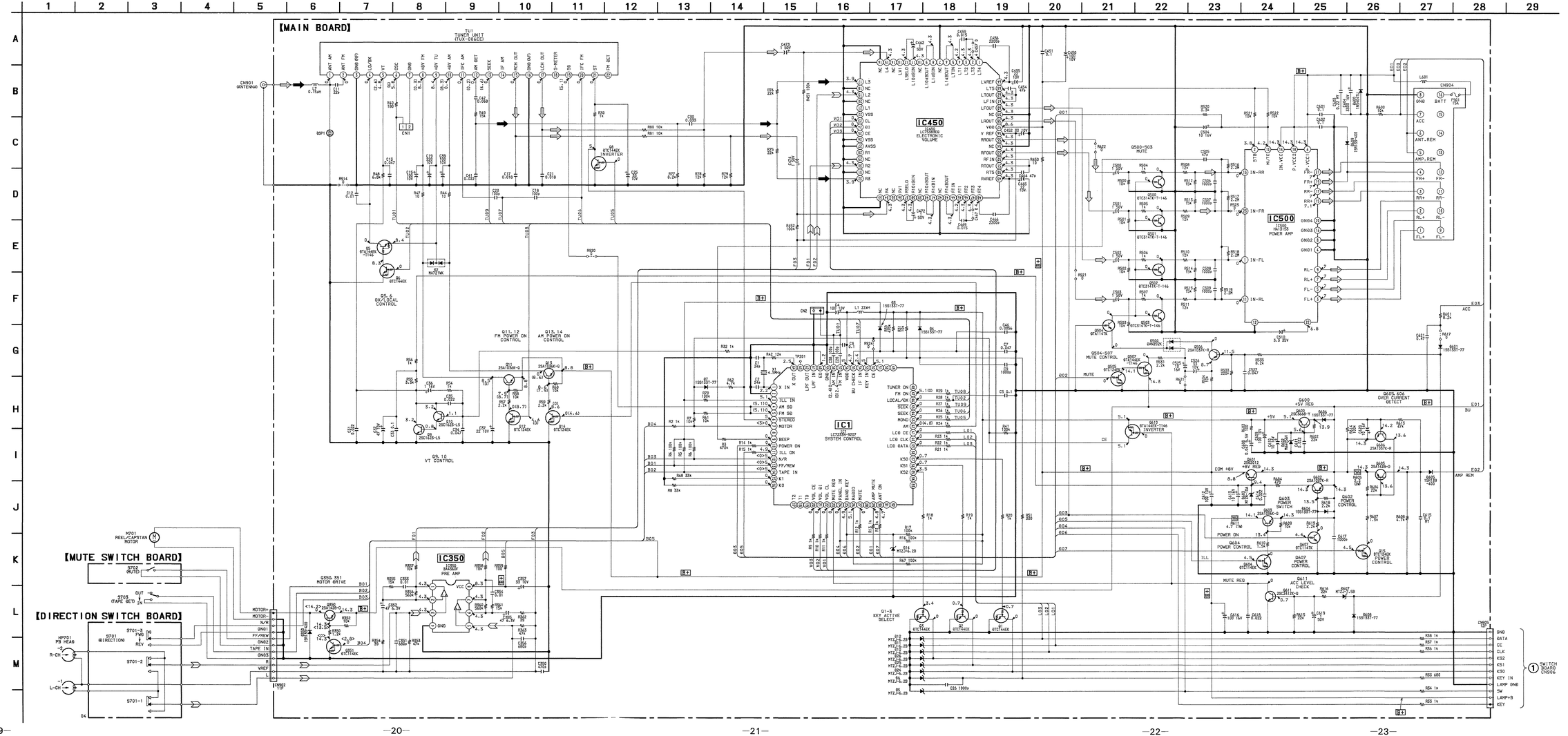
Ref. No.	Location	Ref. No.	Location
D2	E-10	Q2	I-2
D3	H-4	Q3	I-2
D4	G-5	Q5	E-9
D5	I-2	Q6	E-9
D6	H-5	Q8	H-10
D7	G-3	Q9	D-10
D10	H-6	Q10	D-9
D11	H-6	Q11	E-9
D12	H-6	Q12	F-8
D14	I-2	Q13	E-9
D24	I-2	Q14	F-9
D25	I-2	Q15	E-4
D26	I-2	Q350	G-8
D350	H-8	Q351	G-8
D500	D-6	Q500	D-6
D600	B-5	Q501	D-7
D601	D-4	Q502	D-8
D602	E-1	Q503	D-7
D603	D-2	Q504	D-6
D604	C-3	Q505	D-6
D605	B-2	Q506	D-5
D606	E-2	Q507	D-5
D607	D-4	Q600	E-2
D608	D-4	Q601	C-2
D609	B-5	Q602	C-2
		Q603	E-2
IC1	G-3	Q604	D-2
IC350	H-8	Q605	D-3
IC450	E-7	Q606	E-2
IC500	B-7	Q607	D-3
		Q610	E-3
Q1	I-2	Q611	E-4

Note :

- ○— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ▨ : Pattern on the side which is seen.

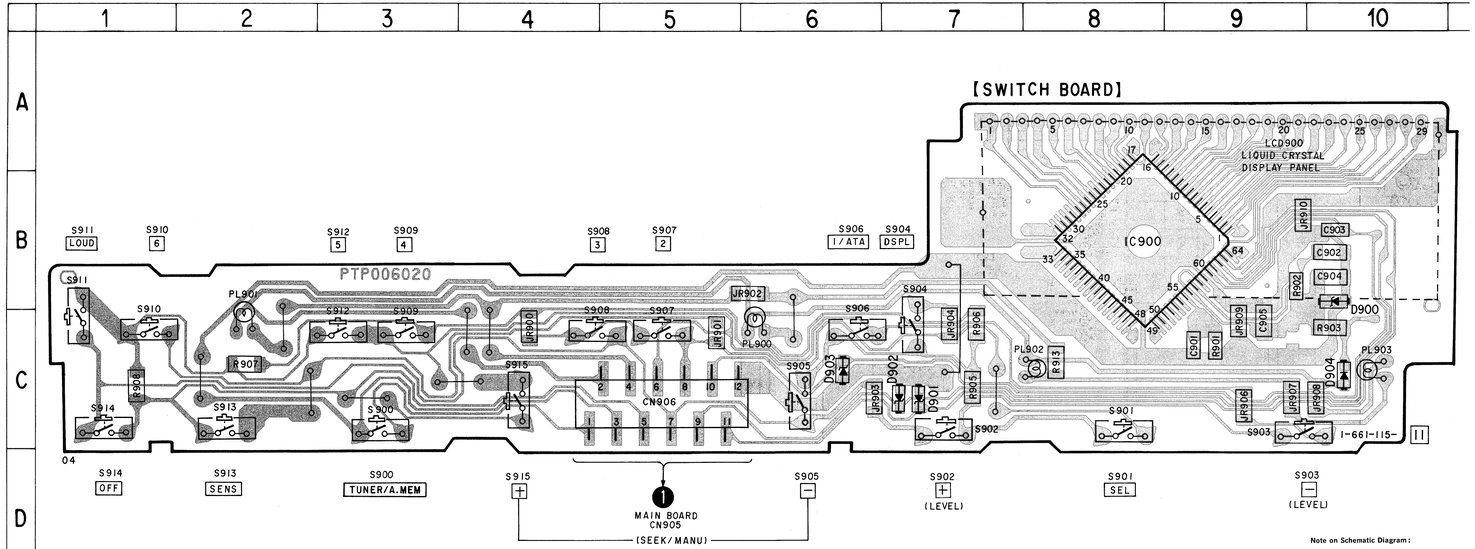


5-3. SCHEMATIC DIAGRAM—MAIN SECTION— • Refer to page 29 for IC Block Diagrams.



Note :
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : nonflammable resistor.
- (B+) : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
  ( ): MW
  < >: PB
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : MW
  ⇨ : PB

5-4. PRINTED WIRING BOARD—PANEL SECTION—



● Semiconductor Location

Ref. No.	Location
D900	B-10
D901	C-7
D902	C-7
D903	C-6
D904	C-10
IC900	B-8

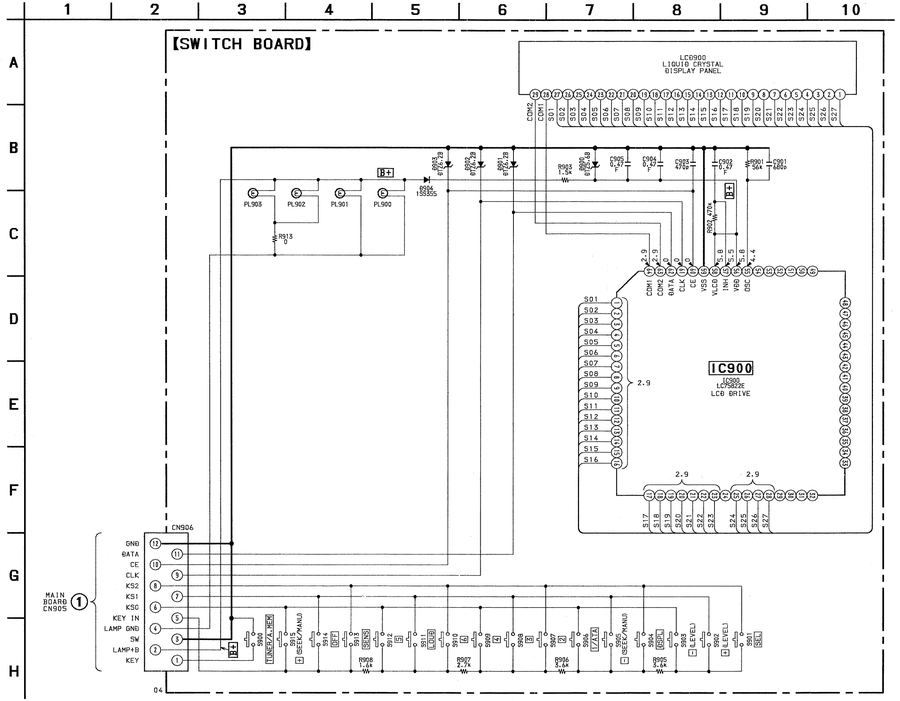
Note on Printed Wiring Board:

- ○— : parts extracted from the component side.
- ▩ : Pattern on the side which is seen.

Note on Schematic Diagram:

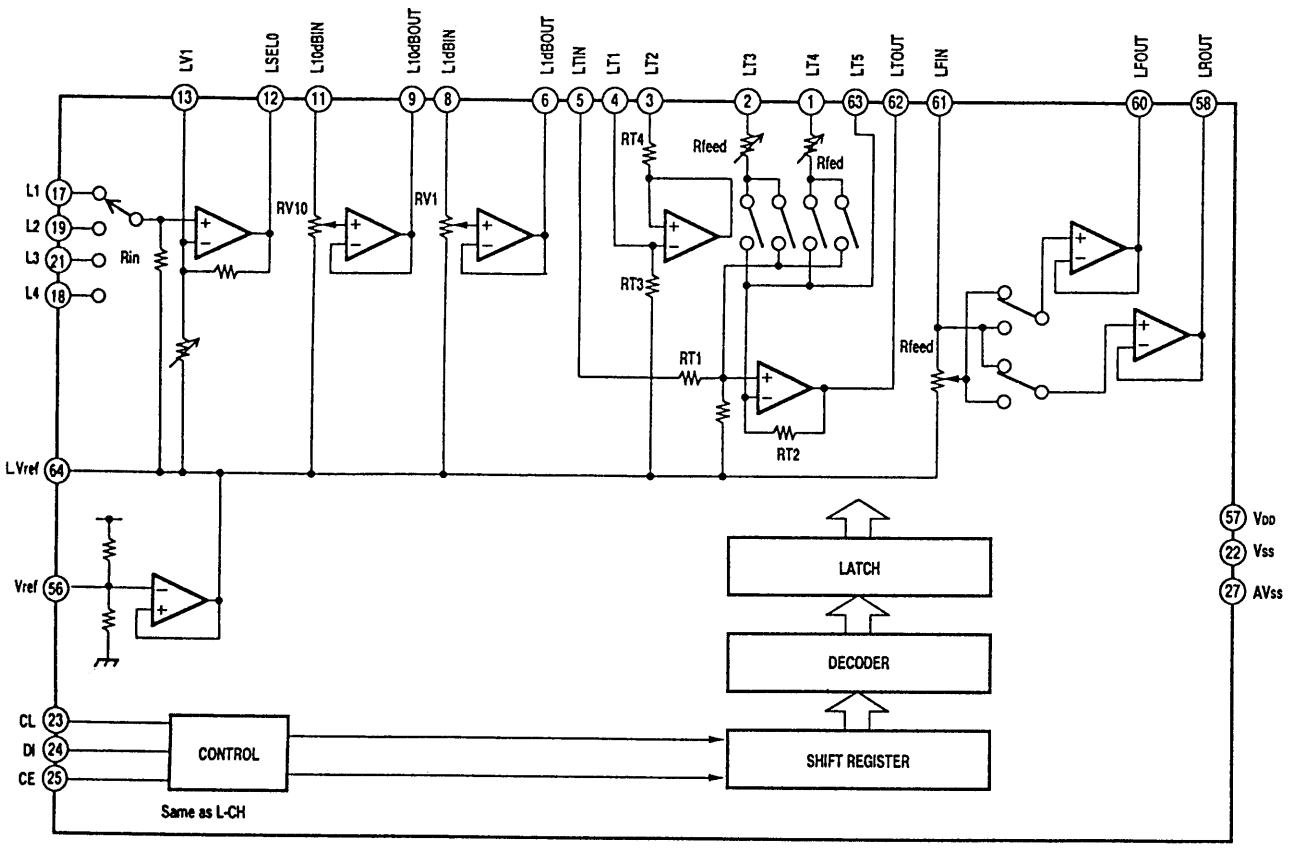
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

5-5. SCHEMATIC DIAGRAM—PANEL SECTION—

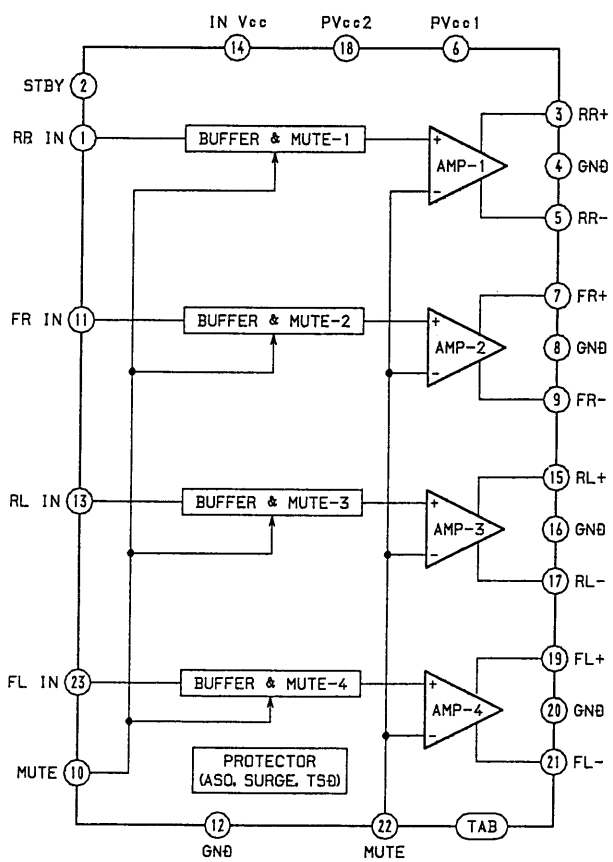


• **IC Block Diagrams**

IC450 LC75383ED



IC500 HA13153

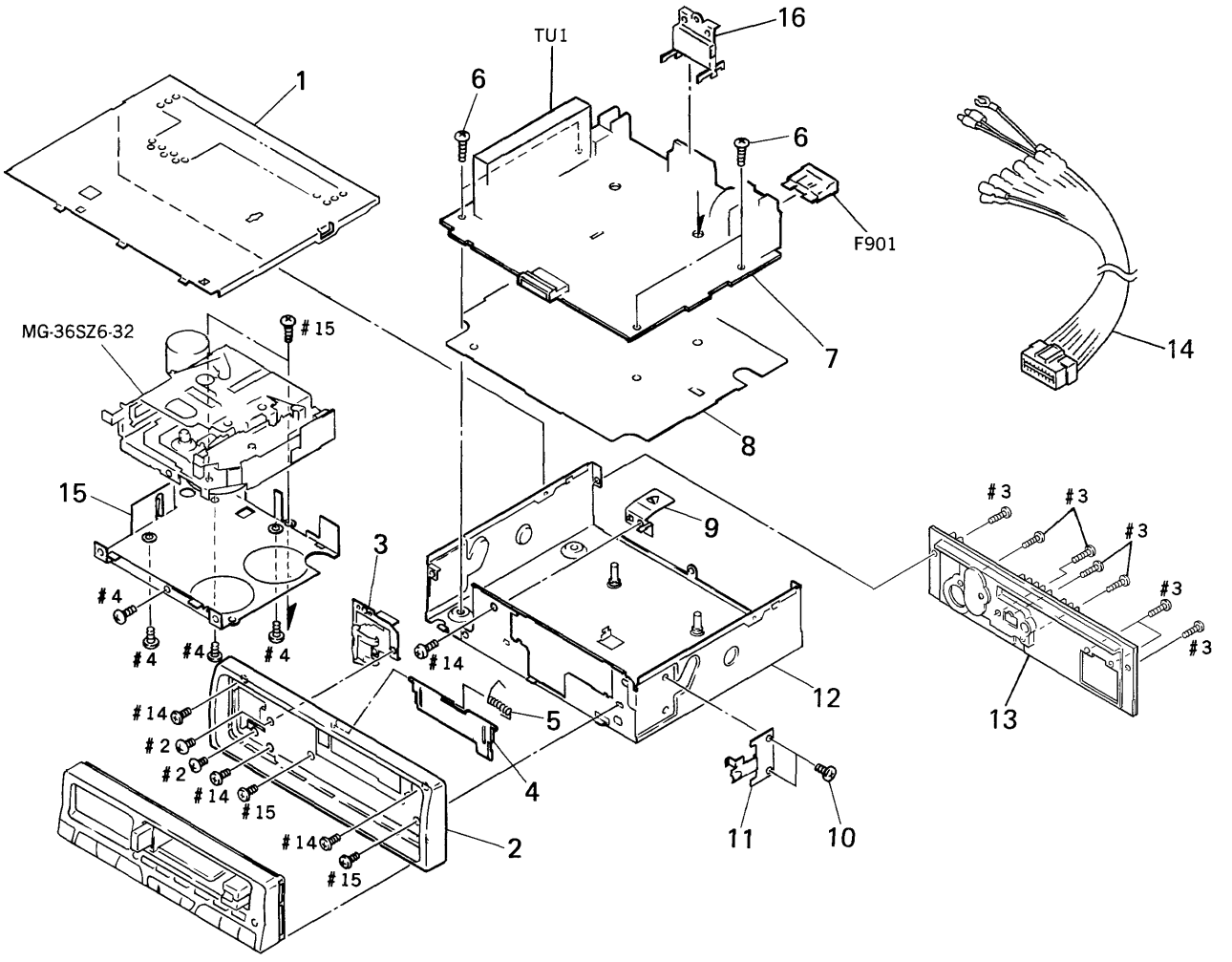


SECTION 6
EXPLODED VIEWS

NOTE:

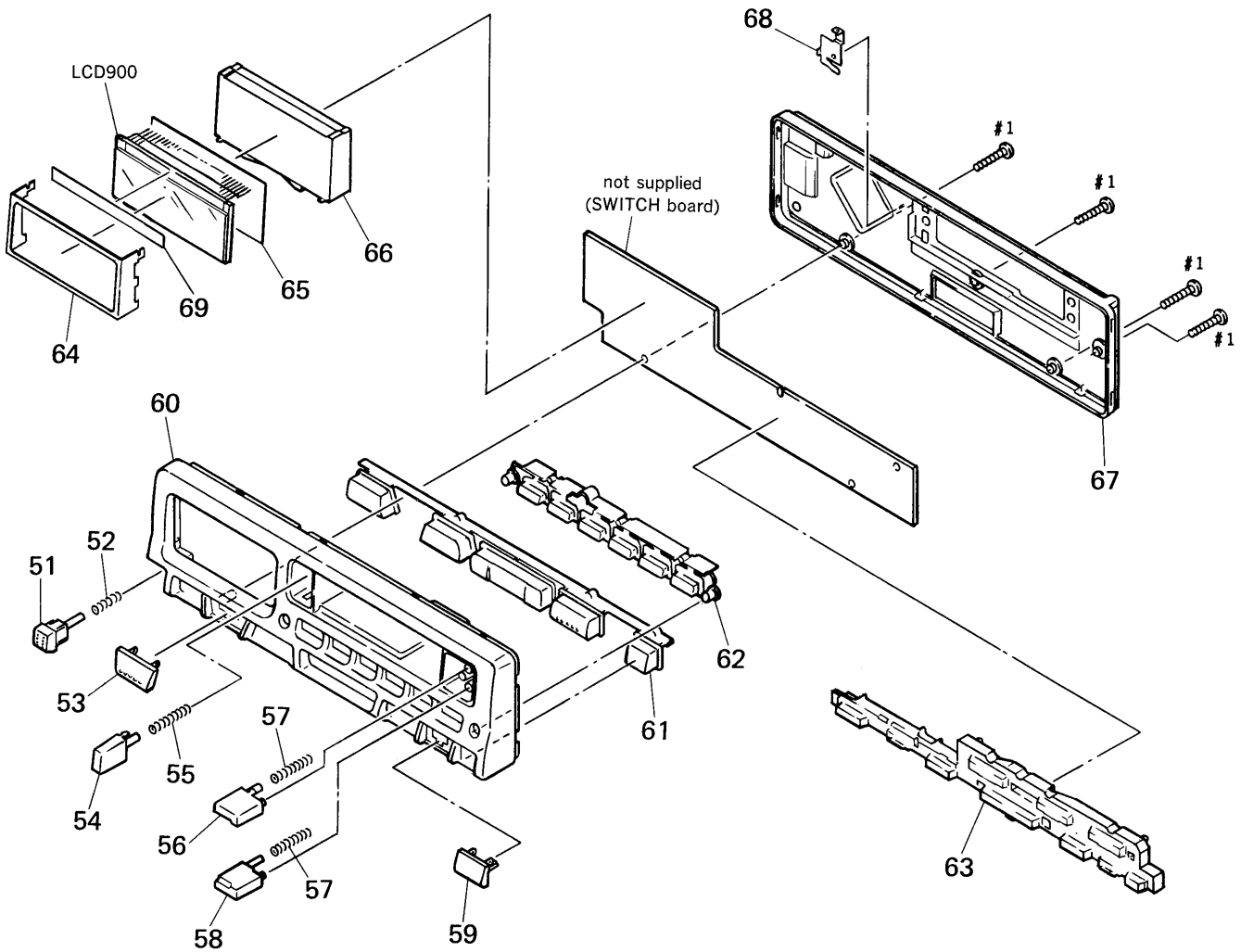
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

6-1. CHASSIS SECTION



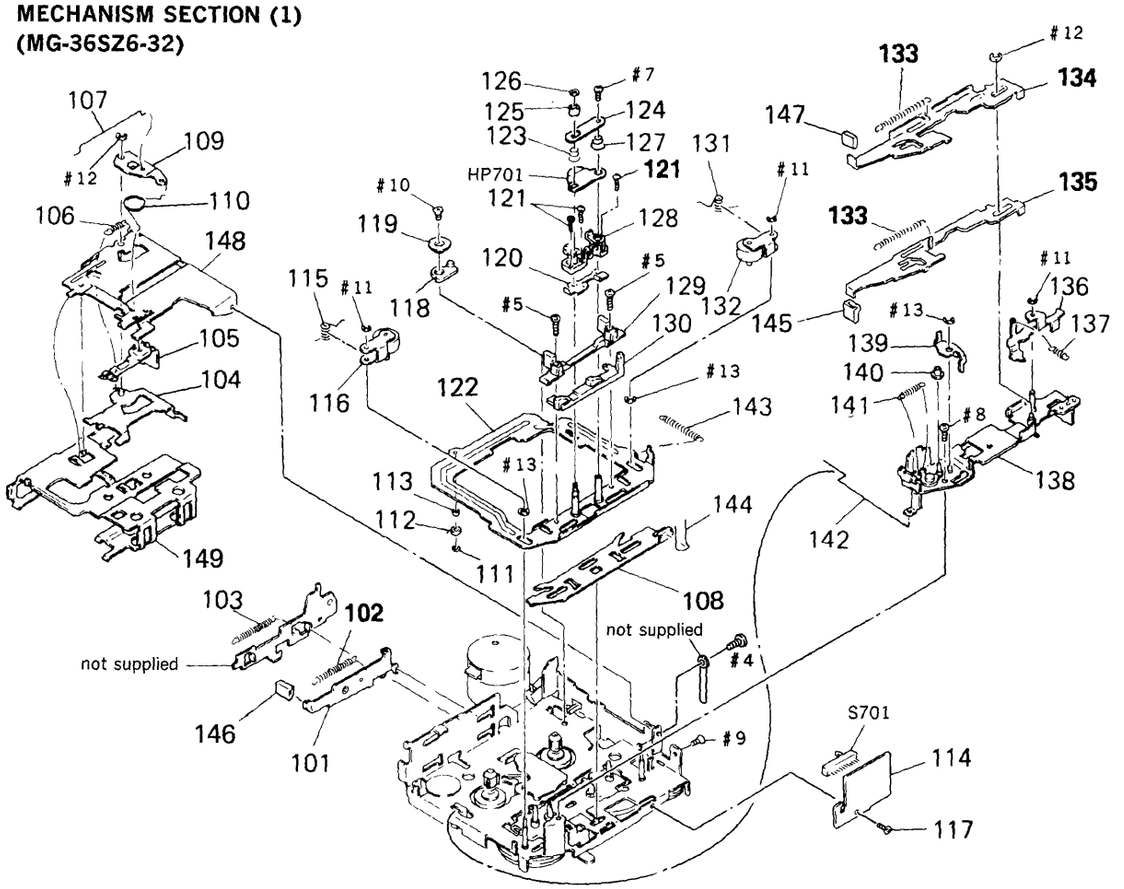
Ref. No.	Part No.	Description	Remark
* 1	3-922-517-01	COVER	
2	3-934-820-01	PANEL, SUB	
3	X-3367-636-1	LOCK ASSY	
4	3-924-404-11	DOOR, CASSETTE	
5	3-377-892-01	SPRING (C DOOR), TORSION	
6	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
* 7	A-3294-109-A	MAIN BOARD, COMPLETE	
* 8	3-922-512-01	INSULATOR	
* 9	3-909-089-01	PLATE, LOCK	
10	3-344-561-21	SCREW (M4X4)	
* 11	3-909-090-01	PLATE (R), LOCK	
* 12	X-3369-999-1	CHASSIS ASSY	
* 13	3-935-370-01	SINK, HEAT	
14	1-776-207-41	CORD (WITH CONNECTOR)	
* 15	3-924-507-01	BRACKET (MD)	
* 16	3-931-260-01	BRACKET (IC)	
F901	1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A	
TU1	A-3282-018-A	TUNER UNIT (TUX-006(EE))	

6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-922-508-01	BUTTON (RELEASE)	
52	3-375-372-01	SPRING (RELEASE)	
53	3-922-502-01	BUTTON (SEL)	
54	3-922-505-01	BUTTON (EJECT)	
55	3-922-513-01	SPRING (EJECT), COMPRESSION	
56	3-922-506-01	BUTTON (FF)	
57	3-922-514-01	SPRING (F/R), COMPRESSION	
58	3-922-507-01	BUTTON (REW)	
59	3-922-503-01	BUTTON (SENS)	
60	3-933-527-01	PANEL, FRONT	
61	3-922-504-01	BUTTON (OFF)	
62	3-922-501-01	BUTTON (1-6)	
* 63	3-922-510-01	PLATE (BUTTON), LIGHT GUIDE	
* 64	3-922-522-01	PLATE (LCD), GROUND	
* 65	3-934-818-01	REFLECTOR	
* 66	3-922-509-01	PLATE (LCD), LIGHT GUIDE	
67	3-934-864-01	PANEL, FRONT BACK	
* 68	3-922-523-01	PLATE (F/S), GROUND	
* 69	3-934-819-01	INSULATOR	
LCD900	1-801-228-11	DISPLAY PANEL, LIQUID CRYSTAL	

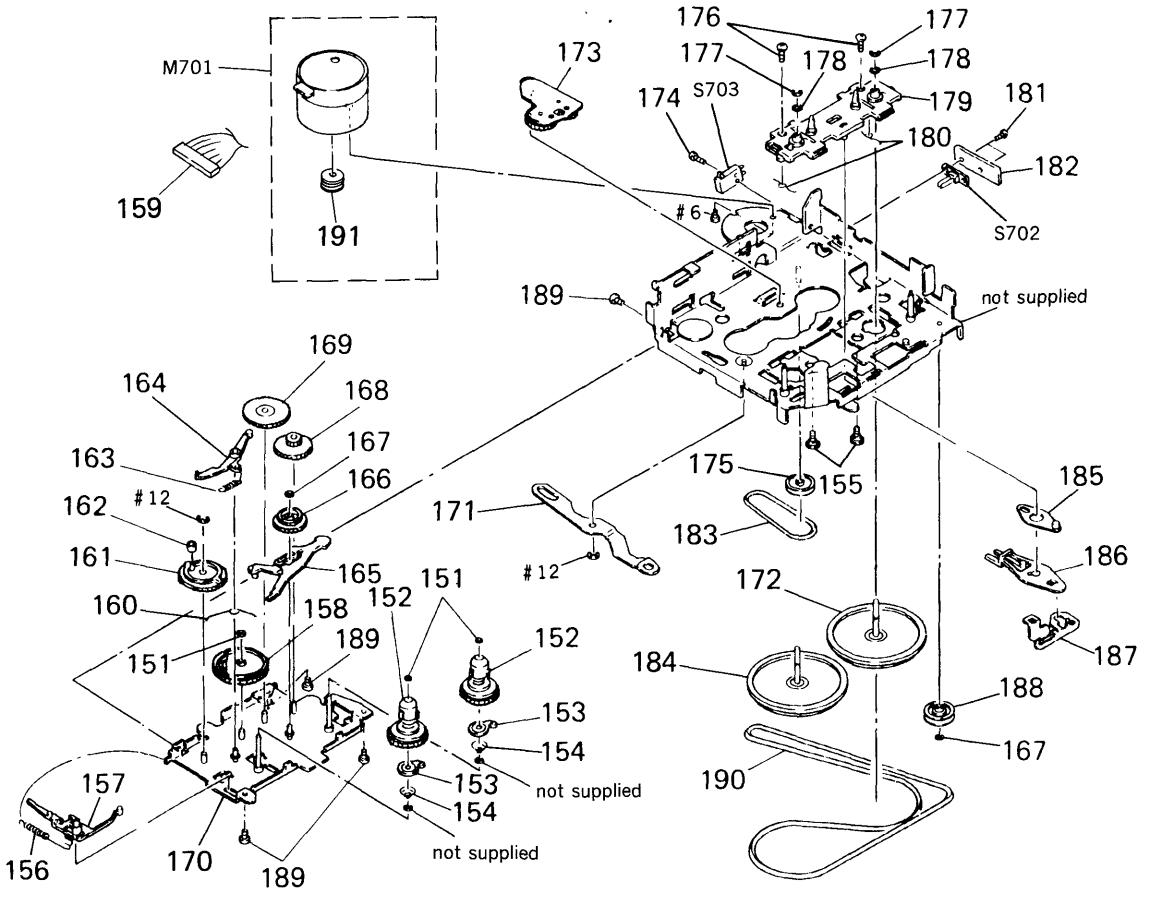
6-3. MECHANISM SECTION (1) (MG-36SZ6-32)



Ref. No.	Part No.	Description	Remark
* 101	3-379-144-01	LEVER (S), EJECT	
102	3-392-950-01	SPRING	
103	3-392-951-01	SPRING	
* 104	3-392-921-01	LOCK ASSY, EJECT CAM	
105	3-392-972-01	HOOKER, TAPE	
106	3-392-953-01	SPRING	
107	3-392-969-01	LINK, RETURN	
* 108	3-392-919-01	ARM ASSY, F, R SELECTION	
* 109	3-392-932-01	PLATE, CENTER	
110	3-392-961-01	SPRING (B)	
111	3-570-615-00	POLY-WASHER (DIA. 1.2)	
112	3-392-945-01	ROLLER (A), H.P	
113	3-392-942-01	ROLLER (B), H.P	
114	3-392-970-01	CHASSIS, SWITCH (DIRECTION SWITCH BOARD)	
115	3-392-958-01	SPRING (R)	
116	3-375-378-01	ARM (R) ASSY, PINCH	
* 117	4-908-792-11	SCREW (B2)	
118	3-372-244-01	ARM (N), MUTE	
* 119	3-397-427-01	COLLAR, MUTE ARM	
120	3-377-908-01	SHIM (X), ADJUSTOR	
121	3-375-379-01	SCREW, AZIMUTH	
* 122	3-392-975-05	PLATE ASSY (S), HEAD	
123	3-392-956-01	SPRING (A)	
* 124	3-392-930-01	RETAINER, SPRING	
125	3-392-943-01	ROLLER, FF	
126	3-676-387-00	POLY-SLIDER (DIA. 1.6)	

Ref. No.	Part No.	Description	Remark
127	3-392-955-01	SPRING (A)	
* 128	3-379-142-01	ARM (B), ADJUSTOR	
129	3-392-984-02	GUIDE, TAPE	
130	3-377-909-02	LINK (X), ADJUSTOR	
131	3-392-957-01	SPRING (F)	
132	3-375-377-01	ARM (F) ASSY, PINCH	
133	3-392-948-01	SPRING	
* 134	3-379-145-01	LEVER (S), FF	
* 135	3-379-146-01	LEVER (S), REW	
* 136	3-392-935-01	ARM, LOCK	
137	3-392-917-01	SPRING	
* 138	3-372-242-01	BRACKET ASSY (D), LEVER	
* 139	3-392-933-01	LEVER (B), CHANGE	
140	3-392-994-01	ROLLER, PROGRAM	
141	3-392-954-01	SPRING	
142	3-372-243-01	LINK (B), SELECTOR	
143	3-392-952-01	SPRING	
144	3-392-962-01	SPRING	
* 145	3-379-139-01	BUTTON, REW	
* 146	3-379-140-01	BUTTON, EJECT	
* 147	3-379-141-01	BUTTON, FF	
148	3-375-383-01	HANGER (X), CASSETTE	
149	3-375-384-01	HOLDER (X), CASSETTE	
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)	

6-4. MECHANISM SECTION (2)
(MG-36SZ6-32)



Ref. No.	Part No.	Description	Remark
151	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
152	3-376-196-01	SPINDLE ASSY (S), REEL	
153	3-375-380-01	CAM ASSY, DETECTION	
154	3-370-619-01	SPRING, BACK TENSION	
155	3-392-918-01	SCREW, EJECT HOOK	
156	3-392-959-01	SPRING	
157	3-392-985-02	RATCHET	
158	3-392-990-01	GEAR, DETECTION	
159	3-387-912-01	CONNECTOR ASSY, 11P	
160	3-392-960-01	SPRING	
161	3-392-987-01	GEAR, SELECTOR	
162	3-392-944-01	COLLAR (SELECTOR GEAR)	
163	3-375-131-01	SPRING, GEAR LOCK ARM	
164	3-392-989-02	ARM, GEAR LOCK	
165	3-392-986-01	ARM, SENSOR	
166	3-392-915-01	GEAR, IDLE	
167	3-570-615-00	POLY-WASHER (DIA. 1.2)	
168	3-392-936-01	GEAR (A)	
169	3-392-937-01	GEAR (B)	
* 170	3-392-976-01	BASE ASSY, REEL	
* 171	3-392-979-01	LEVER, REVERSE	
172	3-392-926-02	FLYWHEEL ASSY (BF)	

Ref. No.	Part No.	Description	Remark
173	3-392-916-01	ARM ASSY, TU GEAR	
174	3-318-203-11	SCREW (B1.7X6), TAPPING	
175	3-392-938-01	GEAR, PULLY	
176	3-318-204-81	SCREW (M1.7X3), TAPPING	
177	3-590-768-00	RING (A), E	
178	3-701-437-11	POLY-SLIDER (A)	
* 179	3-375-381-01	BRACKET ASSY (X), CM	
180	3-392-963-01	SPRING (R)	
181	3-318-204-91	SCREW (M1.7X4), TAPPING	
182	3-375-376-01	MUTE (PWB) (MUTE SWITCH BOARD)	
183	3-375-375-02	BELT (C), SUB	
184	3-392-995-02	FLYWHEEL ASSY (BR)	
* 185	3-392-925-01	ARM (A) ASSY, F.R	
* 186	3-392-939-01	ARM, FF	
* 187	3-392-934-01	ARM (B), F.R	
188	3-392-941-01	PULLEY (A), IDLE	
* 189	4-908-792-11	SCREW (B2)	
190	3-392-967-01	BELT, MAIN	
* 191	3-392-913-01	PULLEY, MOTOR	
M701	X-3364-496-1	MOTOR ASSY (REEL/CAPSTAN)	
S702	1-692-065-11	SWITCH, LEAF (MUTE)	
S703	1-554-790-21	SWITCH, POWER (TAPE DET)	

MAIN

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	A-3294-109-A	MAIN BOARD, COMPLETE			
		**********			
*	3-931-260-01	BRACKET (IC)			
		< CAPACITOR >			
C1	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C2	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C3	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C4	1-124-584-00	ELECT	100uF	20%	10V
C5	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C7	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C9	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C11	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C12	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C13	1-136-834-11	FILM	0.047uF	5%	50V
C15	1-124-584-00	ELECT	100uF	20%	10V
C17	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C18	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C19	1-126-176-11	ELECT	220uF	20%	10V
C20	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C21	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C23	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C25	1-124-229-00	ELECT	33uF	20%	10V
C26	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C30	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C31	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C32	1-124-589-11	ELECT	47uF	20%	16V
C33	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C34	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C35	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C36	1-131-341-00	TANTALUM	1uF	20%	35V
C37	1-128-054-11	ELECT	22uF	20%	10V
C38	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C39	1-124-584-00	ELECT	100uF	20%	10V
C41	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C42	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C46	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C350	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C351	1-163-137-00	CERAMIC CHIP	680PF	5%	50V

Ref.No.	Part No.	Description			Remark
C352	1-126-154-11	ELECT	47uF	20%	6.3V
C353	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C354	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C355	1-126-154-11	ELECT	47uF	20%	6.3V
C356	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C357	1-124-229-00	ELECT	33uF	20%	10V
C450	1-124-584-00	ELECT	100uF	20%	10V
C451	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C452	1-124-229-00	ELECT	33uF	20%	10V
C454	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C455	1-128-054-11	ELECT	22uF	20%	10V
C456	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C457	1-216-295-00	METAL CHIP	0 5%		1/10W
C459	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C462	1-126-301-11	ELECT	1uF	20%	50V
C464	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C465	1-128-054-11	ELECT	22uF	20%	10V
C466	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C467	1-216-295-00	METAL CHIP	0 5%		1/10W
C469	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C472	1-126-301-11	ELECT	1uF	20%	50V
C473	1-126-301-11	ELECT	1uF	20%	50V
C474	1-126-301-11	ELECT	1uF	20%	50V
C500	1-126-301-11	ELECT	1uF	20%	50V
C501	1-126-301-11	ELECT	1uF	20%	50V
C502	1-126-301-11	ELECT	1uF	20%	50V
C503	1-126-301-11	ELECT	1uF	20%	50V
C504	1-126-157-11	ELECT	10uF	20%	16V
C505	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C506	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C507	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C508	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C509	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C510	1-126-093-11	ELECT	3.3uF	20%	35V
C525	1-126-157-11	ELECT	10uF	20%	16V
C526	1-124-229-00	ELECT	33uF	20%	10V
C527	1-164-493-11	CERAMIC CHIP	0.047uF	10%	50V
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-136-169-00	FILM	0.22uF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C604	1-111-046-11	ELECT	0.0033F	20%	16V
C608	1-125-701-11	CAPACITOR	0.047F		5.5V
C609	1-124-584-00	ELECT	100uF	20%	10V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C612	1-124-584-00	ELECT	100uF	20%	10V
C613	1-126-157-11	ELECT	10uF	20%	16V
C614	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C615	1-136-165-00	FILM	0.1uF	5%	50V
C616	1-128-134-11	ELECT	100uF	20%	16V
C617	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C618	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C619	1-126-301-11	ELECT	1uF	20%	50V
C620	1-126-157-11	ELECT	10uF	20%	16V
C621	1-164-005-11	CERAMIC CHIP	0.47uF		25V
		< JACK >			
CN901	1-764-808-14	JACK (ANTENNA)			
		< CONNECTOR >			
* CN902	1-506-993-11	PIN, CONNECTOR (PC BOARD) 11P			
CN904	1-774-701-11	PIN, CONNECTOR 16P			
CN905	1-764-422-11	PLUG, CONNECTOR 12P			
		< DIODE >			
D2	8-719-040-04	DIODE MA721WK-(TX)			
D3	8-719-991-33	DIODE 1SS133T-77			
D4	8-719-991-33	DIODE 1SS133T-77			
D5	8-719-921-54	DIODE MTZJ-6.2B			
D6	8-719-921-54	DIODE MTZJ-6.2B			
D7	8-719-991-33	DIODE 1SS133T-77			
D10	8-719-921-54	DIODE MTZJ-6.2B			
D11	8-719-921-54	DIODE MTZJ-6.2B			
D12	8-719-921-54	DIODE MTZJ-6.2B			
D14	8-719-921-54	DIODE MTZJ-6.2B			
D24	8-719-921-54	DIODE MTZJ-6.2B			
D25	8-719-921-54	DIODE MTZJ-6.2B			
D26	8-719-921-54	DIODE MTZJ-6.2B			
D350	8-719-984-81	DIODE 1SR139-400			
D500	8-719-914-43	DIODE DAN202K			
D600	8-719-049-38	DIODE 1N5404TU			
D601	8-719-991-33	DIODE 1SS133T-77			
D602	8-719-034-43	DIODE MA4056-H(QZ)			
D603	8-719-921-74	DIODE MTZN-10A			
D604	8-719-991-33	DIODE 1SS133T-77			
D605	8-719-984-81	DIODE 1SR139-400			
D606	8-719-991-33	DIODE 1SS133T-77			
D607	8-719-921-63	DIODE MTZJ-7.5B			
D608	8-719-991-33	DIODE 1SS133T-77			
D609	8-719-984-81	DIODE 1SR139-400			
		< DISCHARGE GAP >			
DSP1	1-519-504-11	GAP, DISCHARGE			
		< FUSE >			
F901	1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A			
		< IC >			
IC1	8-759-383-11	IC LC7233N-9207			
IC350	8-759-924-46	IC BA4560F			
IC450	8-759-330-62	IC LC75383ED			
IC500	8-759-369-42	IC HA13153			
		< JUMPER RESISTOR >			
JR1	1-216-295-00	METAL CHIP	0	5%	1/10W
JR2	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L1	1-410-513-11	INDUCTOR	22uH		
L7	1-412-478-11	MICRO INDUCTOR	0.15uH		
L601	1-411-669-12	COIL, CHOKE			
		< TRANSISTOR >			
Q1	8-729-901-01	TRANSISTOR DTC144EK			
Q2	8-729-901-01	TRANSISTOR DTC144EK			
Q3	8-729-901-01	TRANSISTOR DTC144EK			
Q5	8-729-901-06	TRANSISTOR DTA144EK			
Q6	8-729-901-01	TRANSISTOR DTC144EK			
Q8	8-729-901-01	TRANSISTOR DTC144EK			
Q9	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q10	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q11	8-729-901-97	TRANSISTOR 2SA1036K-Q			
Q12	8-729-901-00	TRANSISTOR DTC124EK			
Q13	8-729-901-97	TRANSISTOR 2SA1036K-Q			
Q14	8-729-901-00	TRANSISTOR DTC124EK			
Q15	8-729-901-00	TRANSISTOR DTC124EK			
Q350	8-729-205-94	TRANSISTOR 2SA1428-O			
Q351	8-729-900-53	TRANSISTOR DTC114EK			
Q500	8-729-920-21	TRANSISTOR DTC314TKH04			
Q501	8-729-920-21	TRANSISTOR DTC314TKH04			
Q502	8-729-920-21	TRANSISTOR DTC314TKH04			
Q503	8-729-920-21	TRANSISTOR DTC314TKH04			
Q504	8-729-900-51	TRANSISTOR DTA114TK			
Q505	8-729-901-00	TRANSISTOR DTC124EK			
Q506	8-729-216-22	TRANSISTOR 2SA1162-G			
Q507	8-729-901-06	TRANSISTOR DTA144EK			
Q600	8-729-205-97	TRANSISTOR 2SC3668-Y			

MAIN

Ref. No.	Part No.	Description			Remark
Q601	8-729-209-15	TRANSISTOR	2SD2012		
Q602	8-729-216-22	TRANSISTOR	2SA1162-G		
Q603	8-729-901-97	TRANSISTOR	2SA1036K-Q		
Q604	8-729-900-53	TRANSISTOR	DTC114EK		
Q605	8-729-205-94	TRANSISTOR	2SA1428-O		
Q606	8-729-216-22	TRANSISTOR	2SA1162-G		
Q607	8-729-902-99	TRANSISTOR	DTC114TK		
Q610	8-729-901-06	TRANSISTOR	DTA144EK		
Q611	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
		< RESISTOR >			
R1	1-249-417-11	CARBON	1K	5%	1/4W
R2	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R3	1-247-895-00	CARBON	470K	5%	1/4W
R4	1-247-879-11	CARBON	100K	5%	1/4W
R5	1-247-879-11	CARBON	100K	5%	1/4W
R6	1-247-879-11	CARBON	100K	5%	1/4W
R7	1-247-855-11	CARBON	10K	5%	1/4W
R8	1-247-867-11	CARBON	33K	5%	1/4W
R9	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R10	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R11	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R12	1-249-417-11	CARBON	1K	5%	1/4W
R13	1-249-417-11	CARBON	1K	5%	1/4W
R14	1-249-417-11	CARBON	1K	5%	1/4W
R15	1-249-417-11	CARBON	1K	5%	1/4W
R16	1-247-879-11	CARBON	100K	5%	1/4W
R17	1-247-879-11	CARBON	100K	5%	1/4W
R18	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R19	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R20	1-249-417-11	CARBON	1K	5%	1/4W
R21	1-249-417-11	CARBON	1K	5%	1/4W
R22	1-249-417-11	CARBON	1K	5%	1/4W
R23	1-249-417-11	CARBON	1K	5%	1/4W
R24	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R25	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R26	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R27	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R28	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R29	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R30	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R31	1-208-806-11	METAL GLAZE	10K	1%	1/10W
R32	1-249-417-11	CARBON	1K	5%	1/4W
R33	1-216-198-00	METAL CHIP	1K	5%	1/8W
R34	1-216-198-00	METAL CHIP	1K	5%	1/8W
R35	1-247-827-11	CARBON	680	5%	1/4W
R36	1-249-417-11	CARBON	1K	5%	1/4W
R37	1-249-417-11	CARBON	1K	5%	1/4W
R38	1-249-417-11	CARBON	1K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R39	1-216-113-00	METAL CHIP	470K	5%	1/10W
R40	1-216-031-00	METAL CHIP	180	5%	1/10W
R41	1-216-097-00	METAL CHIP	100K	5%	1/10W
R42	1-216-075-00	METAL CHIP	12K	5%	1/10W
R44	1-249-393-11	CARBON	10	5%	1/4W
R47	1-249-393-11	CARBON	10	5%	1/4W
R48	1-216-069-11	METAL GLAZE	6.8K	5%	1/10W
R49	1-249-431-11	CARBON	15K	5%	1/4W
R51	1-249-411-11	CARBON	330	5%	1/4W
R52	1-216-295-00	METAL CHIP	0	5%	1/10W
R54	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R55	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R56	1-216-198-00	METAL CHIP	1K	5%	1/8W
R57	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R58	1-216-073-00	METAL CHIP	10K	5%	1/10W
R59	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R60	1-216-073-00	METAL CHIP	10K	5%	1/10W
R61	1-247-855-11	CARBON	10K	5%	1/4W
R62	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R67	1-247-879-11	CARBON	100K	5%	1/4W
R68	1-247-867-11	CARBON	33K	5%	1/4W
R70	1-216-097-00	METAL CHIP	100K	5%	1/10W
R75	1-216-081-00	METAL CHIP	22K	5%	1/10W
R76	1-216-081-00	METAL CHIP	22K	5%	1/10W
R77	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R78	1-216-075-00	METAL CHIP	12K	5%	1/10W
R79	1-216-075-00	METAL CHIP	12K	5%	1/10W
R80	1-216-073-00	METAL CHIP	10K	5%	1/10W
R81	1-216-073-00	METAL CHIP	10K	5%	1/10W
R350	1-249-418-11	CARBON	1.2K	5%	1/4W
R352	1-216-073-00	METAL CHIP	10K	5%	1/10W
R353	1-216-089-00	METAL CHIP	47K	5%	1/10W
R354	1-216-164-00	METAL GLAZE	39	5%	1/8W
R355	1-216-077-00	METAL CHIP	15K	5%	1/10W
R356	1-216-115-00	METAL CHIP	560K	5%	1/10W
R357	1-247-855-11	CARBON	10K	5%	1/4W
R358	1-247-855-11	CARBON	10K	5%	1/4W
R359	1-216-025-00	METAL CHIP	100	5%	1/10W
R360	1-216-115-00	METAL CHIP	560K	5%	1/10W
R361	1-216-077-00	METAL CHIP	15K	5%	1/10W
R362	1-216-015-00	METAL CHIP	39	5%	1/10W
R363	1-216-089-00	METAL CHIP	47K	5%	1/10W
R450	1-216-150-00	METAL GLAZE	10	5%	1/8W
R451	1-216-097-00	METAL CHIP	100K	5%	1/10W
R452	1-216-097-00	METAL CHIP	100K	5%	1/10W
R500	1-216-073-00	METAL CHIP	10K	5%	1/10W
R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-073-00	METAL CHIP	10K	5%	1/10W
R503	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref.No.	Part No.	Description			Remark
R504	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R505	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R506	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R507	1-216-198-00	METAL CHIP	1K	5%	1/8W
R508	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R509	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R510	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R511	1-216-224-00	METAL GLAZE	12K	5%	1/8W
R512	1-216-077-00	METAL CHIP	15K	5%	1/10W
R513	1-216-077-00	METAL CHIP	15K	5%	1/10W
R514	1-216-077-00	METAL CHIP	15K	5%	1/10W
R515	1-216-077-00	METAL CHIP	15K	5%	1/10W
R516	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R517	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R518	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R519	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R520	1-249-423-11	CARBON	3.3K	5%	1/4W
R521	1-216-073-00	METAL CHIP	10K	5%	1/10W
R522	1-216-073-00	METAL CHIP	10K	5%	1/10W
R523	1-216-295-00	METAL CHIP	0	5%	1/10W
R531	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R533	1-216-254-00	METAL GLAZE	220K	5%	1/8W
R534	1-216-073-00	METAL CHIP	10K	5%	1/10W
R535	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R600	1-216-073-00	METAL CHIP	10K	5%	1/10W
R601	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R602	1-216-081-00	METAL CHIP	22K	5%	1/10W
R603	1-247-807-11	CARBON	100	5%	1/4W
R604	1-216-041-11	METAL GLAZE	470	5%	1/10W
R605	1-216-373-11	METAL OXIDE	2.2	5%	2W F
R606	1-216-081-00	METAL CHIP	22K	5%	1/10W
R607	1-247-835-11	CARBON	1.5K	5%	1/4W
R608	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R609	1-216-073-00	METAL CHIP	10K	5%	1/10W
R610	1-247-835-11	CARBON	1.5K	5%	1/4W
R611	1-216-357-00	METAL OXIDE	4.7	5%	1W F
R613	1-216-089-00	METAL CHIP	47K	5%	1/10W
R614	1-216-097-00	METAL CHIP	100K	5%	1/10W
R615	1-216-081-00	METAL CHIP	22K	5%	1/10W
R616	1-216-230-00	METAL GLAZE	22K	5%	1/8W
R617	1-216-295-00	METAL CHIP	0	5%	1/10W
R618	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R619	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R621	1-216-296-00	METAL CHIP	0	5%	1/8W
R622	1-216-295-00	METAL CHIP	0	5%	1/10W
R914	1-216-296-00	METAL CHIP	0	5%	1/8W
R920	1-216-295-00	METAL CHIP	0	5%	1/10W
R921	1-216-295-00	METAL CHIP	0	5%	1/10W
R924	1-216-295-00	METAL CHIP	0	5%	1/10W

Ref.No.	Part No.	Description			Remark
		< TUNER >			
TU1	A-3282-018-A	TUNER UNIT (TUX-006(EE))			
		< VIBRATOR >			
X1	1-567-713-11	VIBRATOR, CRYSTAL (4.5MHz)			
**********					
		SWITCH BOARD			
		**********			
*	3-922-509-01	PLATE (LCD), LIGHT GUIDE			
*	3-922-522-01	PLATE (LCD), GROUND			
*	3-934-818-01	REFLECTOR			
*	3-934-819-01	INSULATOR			
		< CAPACITOR >			
C901	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C902	1-162-637-11	CERAMIC CHIP	0.47uF		16V
C903	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C904	1-162-637-11	CERAMIC CHIP	0.47uF		16V
C905	1-162-637-11	CERAMIC CHIP	0.47uF		16V
		< CONNECTOR >			
CN906	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D900	8-719-977-03	DIODE	DTZ5.6B		
D901	8-719-105-99	DIODE	RD6.2M-B1		
D902	8-719-105-99	DIODE	RD6.2M-B1		
D903	8-719-105-99	DIODE	RD6.2M-B1		
D904	8-719-988-62	DIODE	1SS355		
		< IC >			
IC900	8-759-341-77	IC	LC75822E		
		< JUMPER RESISTOR >			
JR900	1-216-296-00	METAL CHIP	0	5%	1/8W
JR901	1-216-295-00	METAL CHIP	0	5%	1/10W
JR902	1-216-296-00	METAL CHIP	0	5%	1/8W
JR903	1-216-296-00	METAL CHIP	0	5%	1/8W
JR904	1-216-296-00	METAL CHIP	0	5%	1/8W
JR906	1-216-296-00	METAL CHIP	0	5%	1/8W
JR907	1-216-296-00	METAL CHIP	0	5%	1/8W
JR908	1-216-296-00	METAL CHIP	0	5%	1/8W
JR909	1-216-296-00	METAL CHIP	0	5%	1/8W
JR910	1-216-296-00	METAL CHIP	0	5%	1/8W
		< LIQUID CRYSTAL DISPLAY >			
LCD900	1-801-228-11	DISPLAY PANEL, LIQUID CRYSTAL			

SWITCH

Ref. No.	Part No.	Description			Remark
		< PILOT LAMP >			
PL900	1-517-535-11	LAMP, PILOT			
PL901	1-517-535-11	LAMP, PILOT			
PL902	1-517-535-11	LAMP, PILOT			
PL903	1-517-535-11	LAMP, PILOT			
		< RESISTOR >			
R901	1-216-091-00	METAL CHIP	56K	5%	1/10W
R902	1-216-113-00	METAL CHIP	470K	5%	1/10W
R903	1-216-202-00	METAL GLAZE	1.5K	5%	1/8W
R905	1-216-211-00	METAL GLAZE	3.6K	5%	1/8W
R906	1-216-211-00	METAL GLAZE	3.6K	5%	1/8W
R907	1-216-208-00	METAL GLAZE	2.7K	5%	1/8W
R908	1-216-203-00	METAL GLAZE	1.6K	5%	1/8W
R913	1-216-296-00	METAL CHIP	0	5%	1/8W
		< SWITCH >			
S900	1-572-704-21	SWITCH, KEY BOARD (TUNER A.MEM)			
S901	1-572-704-21	SWITCH, KEY BOARD (SEL)			
S902	1-572-704-21	SWITCH, KEY BOARD (+)			
S903	1-572-704-21	SWITCH, KEY BOARD (-)			
S904	1-572-704-21	SWITCH, KEY BOARD (DSPL)			
S905	1-572-704-21	SWITCH, KEY BOARD (SEEK/MANU -)			
S906	1-572-704-21	SWITCH, KEY BOARD (1 ATA)			
S907	1-572-704-21	SWITCH, KEY BOARD (2)			
S908	1-572-704-21	SWITCH, KEY BOARD (3)			
S909	1-572-704-21	SWITCH, KEY BOARD (4)			
S910	1-572-704-21	SWITCH, KEY BOARD (6)			
S911	1-572-704-21	SWITCH, KEY BOARD (LOUD)			
S912	1-572-704-21	SWITCH, KEY BOARD (5)			
S913	1-572-704-21	SWITCH, KEY BOARD (SENS)			
S914	1-572-704-21	SWITCH, KEY BOARD (OFF)			
S915	1-572-704-21	SWITCH, KEY BOARD (SEEK/MANU +)			

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MISCELLANEOUS

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14	1-776-207-41	CORD (WITH CONNECTOR)
F901	1-532-982-11	FUSE (BLADE TYPE) (AUTO FUSE) 15A
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)
M701	X-3364-496-1	MOTOR ASSY (REEL/CAPSTAN)
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)
S702	1-692-065-11	SWITCH, LEAF (MUTE)
S703	1-554-790-21	SWITCH, POWER (TAPE DET)

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Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-856-292-11	MANUAL, INSTRUCTION (ENGLISH, POLISH, BULGARIAN, HUNGARIAN, RISSIAN)	
	3-856-293-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, POLISH, BULGARIAN, HUNGARIAN, RUSSIAN)	
	X-3367-692-3	CASE ASSY	

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HARDWARE LIST

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#1	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT
#2	7-621-772-10	SCREW +B 2X4
#3	7-621-770-XX	SCREW +PTT 2.6X8 (S)
#4	7-621-775-08	SCREW +P 2.6X3
#5	7-627-553-88	SCREW, PRECISION +P 2X7
#6	7-621-255-15	SCREW +P 2X3
#7	7-621-255-20	SCREW +P 2X4
#8	7-621-255-25	SCREW +PTT 2X4 (S)
#9	7-621-555-10	SCREW +K 2X3
#10	7-621-591-00	SCREW +K 2X4
#11	7-624-102-04	STOP RING 1.5, TYPE -E
#12	7-624-104-04	STOP RING 2.0, TYPE -E
#13	7-624-118-01	RING, RETAINING E-2.5
#14	7-621-773-95	SCREW +B 2.6X6
#15	7-621-770-67	SCREW +B 2.6X6

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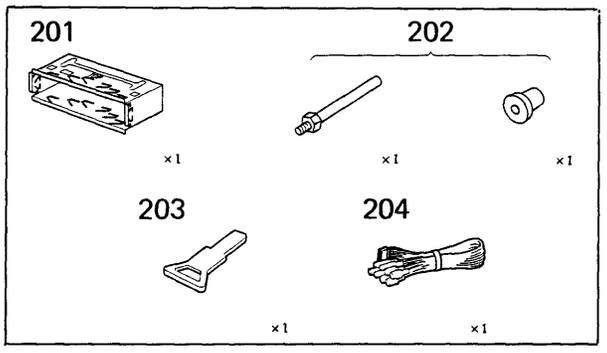
Ref. No.	Part No.	Description	Remark
		MOUNTING HARDWARE	
		**********	
201	X-3367-691-1	FRAME ASSY, FITTING	
202	X-3368-725-1	SCREW ASSY, FITTING	
203	3-909-097-01	KEY	
204	1-776-207-41	CORD (WITH CONNECTOR)	



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